FXS SIP Gateway Administrator User Manual (2FXS, 2AFXS, 4AFXS)

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Preface

Congratulations on your purchase of the VoIP Gateway.

➢ About this User's Manual

This user's guide gives hardware specifications and explains web configuration and command line configuration for the 2FXS, 2AFXS, and 4AFXS.

➢ General Syntax Conventions

- ➢ Mouse action sequences are denoted using a comma. For example, click start, Settings, Control Panel, Network means first you click Start, Click or move the mouse pointer over Settings the click or move the mouse pointer over Control Panel and finally click (or double-click) Network.
- ➢ "Enter" means for your to type one or more characters.

➢ Naming Conventions

- ➢ "2FXS" Gateway provides two Phone port and one Ethernet Port.
- ➢ "2AFXS" Gateway provides two Phone port and one Ethernet Port.
- ➢ "4AFXS" Gateway provides four Phone port and two Ethernet Port.

➢ Related Documentation

- ➢ This user's guide provides hardware connection details and configuration and management instruction for the managements VoIP Gateway.

Part I:

FXS Gateway Overview

This part introduces the general features default settings and hardware of the FXS Gateway.

Chapter 1
VoIP Gateway Overview

The chapter introduces the VoIP Gateway general feature, factory default settings and hardware.

1.1 FXS Gateway Overview

FXS Gateway integrated data and voice in one device, which based on IETF RFC 2543 bis-09 compliance, provides voice and fax over IP networks. Its simplified operation and configuration features are the most suitable for residential and SOHO application. Just an IP address and one phone set bring you to Voice over IP world.

1.2 Features of The FXS Gateway

➢ FXS Gateway Features

- IETF RFC 2543 bis-09 compliance
- 1AFXS: Four 10/100 Base-T Ethernet port
- Configuration interface: RS-232, TELNET and HTTP web management
- Transmit Voice and T.38 f ax simultaneously
- Provides call progress tone
- E.164 Common Dial Pl an
- DTMF Dialing
- Inband / Outband DTMF
- TFTP/FTP software upgrade
- Remote configuration/ reset
- LED indication for system status
- Support Static IP, DHCP and PPPoE
- Dimensions: 165(W) x 29(H) x 139 mm (D)
- Auto RJ-45 cross cable and straight cable switching

➢ Audio feature

- Codec: G.711 a/μ law, G.723.1 (6.3kbps), G.729A
- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generate)
- G.168/165-compliant adaptive echo cancellation
- Dynamic Jitter Buffer
- Bad Frame Interpolation
- Voice/DTMF Gain Settings

➢ Interface

- Four 10/100 Base-T Ethernet RJ45 ports (Auto LAN MDI/MDIX).
- One DB-9 RS232 COM Port.

- Two/Four RJ11 Telephone Port (FXS).
- DC 12V input.
-

➢ **System Monitoring**

- System status (Link, Ready, Status, TEL, Power).

➢ **Remote Firmware Upgrade**

You can use FTP/TFTP to perform configuration backup/restore and firmware upgrade for the FXS Gateway from a remote location.

➢ **Security**

- Password protection for system management
- VLAN

1.3 Default Settings

The following are the settings of the defualt profile

The FXS gateway has two accounts to let user configure the settings. One is root, another is administrator. The difference between root and administrator is that the administrator cannot configure the SIP Configuration and Upgrade 2M version firmware.

- Login: root (or administrator)
- Password: Null (default)

1.3.1 IP Parameters

- IP Address = 10.1.1.3
- Subnet mask = 255.0.0.0
- Default gateway = 10.1.1.254

1.3.2 Telnet and Web Login Password

- Login = root
- Password = Null (default)

1.4 Front Panels

The LEDs on the front panel indicate the operational status of the Gateway.

Figure 1-1 2FXS Gateway Front Panel

Figure 1-2 2AFXS Gateway Front Panel

Figure 1-3 4AFXS Gateway Front Panel

1.5 Back Panel Ports

Figure 1-4 2FXS Gateway Back Panel Ports

Figure 1-5 2AFXS Gateway Back Panel Ports

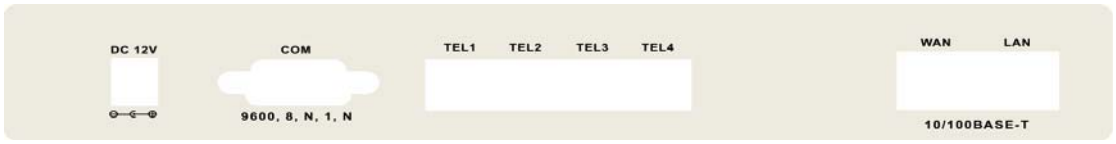


Figure 1-6 4AFXS Gateway Back Panel Ports

1.6 Hardware Specifications

These are the hardware details of the 2FXS, 2AFXS, 4AFXS.

1.6.1 2FXS LEDs

The following table describes the LED functions:

Table 1-1 2FXS LEDs Descriptions

LEDs	Functions	Indicator Status	Active	Description
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.
TEL (1-2)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Status	Status	Green	Off	The FXS Gateway is under Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Proxy when it is under Proxy mode.
			Blinking	The FXS Gateway is not registered to Proxy when it is in Proxy mode.

LEDs	Functions	Indicator Status	Active	Description
				The FXS Gateway is in downloading mode.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Active			Blinking	Ethernet data is being transmitted/received.
Link	LAN	Green	On	The FXS Gateway is physically connected to the Ethernet correctly.
			Off	The 10M LAN is not connected.

1.6.2 2AFXS LEDs

The following table describes the LED functions:

Table 1-2 2AFXS LEDs Functions

LEDs	Functions	Indicator Status	Active	Description
LAN				Switch to another device, such as PC
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	LAN	Green	Off	The 10M LAN is connected.
			On	The 100M LAN is connected.
WAN				Uplink to the HUB/Router directly.
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	WAN	Green	Off	The 10M WAN is connected.
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.

LEDs	Functions	Indicator Status	Active	Description
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Proxy when it is in Proxy mode.
			Blinking	The FXS Gateway is not registered to Proxy when it is in Proxy mode. The FXS Gateway is in downloading mode.
TEL(1-2)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.

1.6.3 4AFXS LEDs

Table 1-3 LEDs Functions

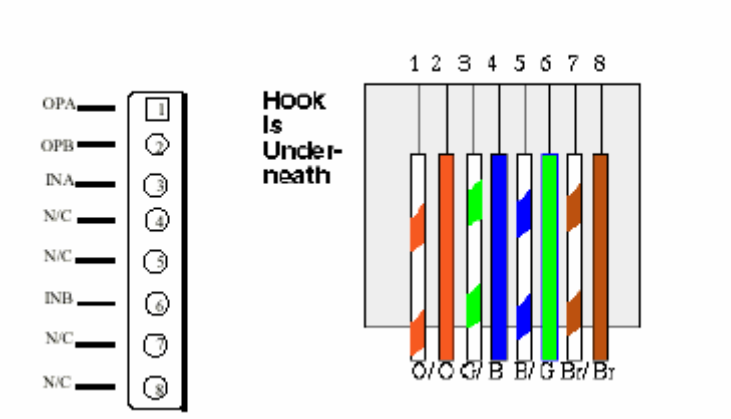
LEDs	Functions	Indicator Status	Active	Description
LAN				Switch to another device, such as PC
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	LAN	Green	Off	The 10M LAN is connected.
			On	The 100M LANis connected.
WAN				Uplink to the HUB/Router directly.
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	WAN	Green	Off	The 10M WAN is connected.
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow	The FXS Gateway is in normal

LEDs	Functions	Indicator Status	Active	Description
			Blinking	mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Proxy when it is in Proxy mode.
			Blinking	The FXS Gateway is not registered to Proxy when it is in Proxy mode. The FXS Gateway is in downloading mode.
TEL(1-4)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.

1.6.4 Back Panel Port

- **Ethernet Port:**

Ethernet port is for connecting VoIP Gateway to network, transmit rate supports 10/100 Base-T.



Ethernet connector（LAN）

- **COM Port:**

RS232 console port (DB-9pin male connector)

Note: use straightforward cable to connect to your computer.

PINOUTS

Pin	Name	Dir	Description
2	RXD	←	Receive Data
3	TXD	→	Transmit Data
5	GND	—	System Ground

TEL Port:

- **TEL Port:**

RJ-11 connector, FXS interface. To connect analog phone sets or trunk line of PABX.

- **12V DC Port:**

DC Power supply.

1.6.5 Back Panel Connections

This section outlines how to connect your VoIP Gateway to the LAN and the WAN. In the case of connecting a Cable Modem you must connect the coaxial cable from your cable service to the threaded coaxial cable connect on the back of the cable modem.

Step 1. Connecting the Console Port

For the initial configuration of your VoIP Gateway, you need to use terminal emulator software on a workstation and connect it to the VoIP Gateway the console port. Connect the 9-pin end of the console cable to the console port of the VoIP Gateway and the other end to a serial port (COM1, COM2 or other COM port) of your workstation. You can use an extension RS-232 cable if the enclosed one is too short. After the initial setup, you can modify the configuration remotely through telnet connections.

Step 2. Connect the VoIP Gateway to the WAN port

Connect the WAN port (silver) on the VoIP Gateway to the Ethernet port on the cable modem using the cable that came with your cable modem. The Ethernet port on the cable modem is sometimes labeled “PC” or “Workstation”.

Step 3. Connecting the PC to the LAN

If you have more than one PC, you must use an external hub. Connect the 10/100M LAN Port (gold) on the VoIP Gateway to a port on the hub using a straight through Ethernet cable. If you only have one PC, you can connect the VoIP Gateway to the PC directly without a hub. For a single PC, connect the 10/100M LAN port on the VoIP Gateway to the Network Adapter on the PC using a crossover cable (red tag).

Step 4. Connecting the Power Adapter to your VoIP Gateway

Connect the power adapter to the port labeled **POWER** on the rear panel VoIP Gateway.

Caution: To prevent damage to the VoIP Gateway, first make sure you have the correct AC power adapter. Please see the Appendices for AC power adapter specifications for your region.

Step 5. Grounding the VoIP Gateway

If you want to ground the VoIP Gateway then connect a grounded wire to the F.G. (Frame Ground) of the VoIP Gateway.

1.7 Additional Installation Requirements

In addition to the contents of your package, there are other hardware and software requirements you need before you can install and use your VoIP Gateway. These requirements include:

1. A computer with an Ethernet NIC (Network Interface Card) installed.
2. A computer equipped with communications software configured to the following parameters:
   - **VT100 terminal emulation.**
   - 9600 Baud.
   - No parity, 8 Data bits, 1 stop bit, Flow Control set to None.
3. Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.
4. Analog telephone set
5. Software tools: Gatekeeper (optional)

After the VoIP Gateway is properly set up, you can make future changes to the configuration through telnet connections

1.8 Setting Up the TCP/IP Protocol

If you are not sure whether the TCP/IP Protocol has been installed, follow these setups to check, and if necessary, install TCP/IP onto your PCs.

Step 1. Click the [Start] button, Choose [Settings], then [Control Panel]. Double-click the [Network] icon. Your Network window should appear as follows.

Step 2. Select the [Configuration] tab.

Import:

For Windows 2000 & Windows XP Setting, you will find that they differs with Windows 98/ME/NT slightly. See the Following for reference.

Click the “Local Area Connection” icon on the lower right hand side of your desktop screen.

In the [**Local Area Connection Status**] windows, click the [**Properties]** button the your Network windows will appear.

There is only one tab, [**General**], in the Network window.

Step 3. Click whether the TCP/IP Protocol has already been installed onto your computer’s Ethernet card. Note that TCP/IP Protocol an be installed for a computer’s Dial-Up Adapter as well as for the Ethernet cad.

- If yes, go to set 7.
- If no, click the [Add] button

Step 4. Double-click [Protocol] in the Select Network Component Type or highlight [Protocol] then click [Add].

Step 5. Highlight [Microsoft] under the list of manufactures

Step 6. After a new second, you will be returned to the Network window. The TCP/IP Protocol should now be on the list of installed network components.

Step 7. Click the [Properties] button. The TCP/IP Properties windows consist of several tabs. Choose the [IP Address] tab.

Step 8. Select [Specify an IP Address] and enter [10.1.1.1] in the [IP Address] location (where xxx is a number between 2 and 254 used by the VoIP Gateway to identify each computer), and the default [Subnet Mask: 255.0.0.0]. Note than no two computers on the same LAN can have the same IP address.

Step 9. Click on the [DNS Configuration] tab and select [Enable DNS]. Then click the [Add] button.

Step 10. Click on the [Gateway] tab and enter the High-Performance VoIP Gateway default gateway value 10.1.1.254 in the [new gateway] field, then click [Add] Button.

Step 11. Click [OK] button, Restart your PC to complete the TCP/IP installation.

1.9 Power Up Your VoIP Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The Status LED will come on after the system tests are complete. The WAN LED and one of the LAN LEDs come on immediately after the Status LED come on, if connections have been made to the LAN and WAN ports.

Part II:

Web Configuration with FXS Gateway

This part tells how to access and navigate the web configuration and perform initial configuration. It also describes the Getting Started web configuration when you use the FXS Gateway.

Chapter 2
Web Configuration with FXS Introduction

This Chapter describes how to login into the WEB and navigate through it.

2.1 Web Configuration with FXS Overview

The embedded web configuration allows you to use a web browser to manage the FXS Gateway.

2.2 Accessing the Web Configuration

You will need a computer with and Ethernet 10BaseT, 100Base-TX Network Interface Card (NIC). Connect to the LAN port in the FXS.

Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.

Use the following instructions to login on to the web configuration.

2.3 Login and welcome screen

Step 1. Start your web browser.

Step 2. Launch your web browser and enter [10.1.1.3] (the default IP address of the FXS Gateway) in the **Location** or **Address** field. Press **Enter.**

Step 3. The **Password** screen now appears. Please type [**root**] in the user name field, (it may display automatically for you) and your password (default [Null]) in the password field.

Step 4. Click **OK.**

Figure 2-1 Login Screen

Step 5. After a successful login, you will see the welcome screen show next.

2.4 Welcome Screen

This is the web configuration welcome screen. Click a link on the navigation panel to go to the corresponding screen.

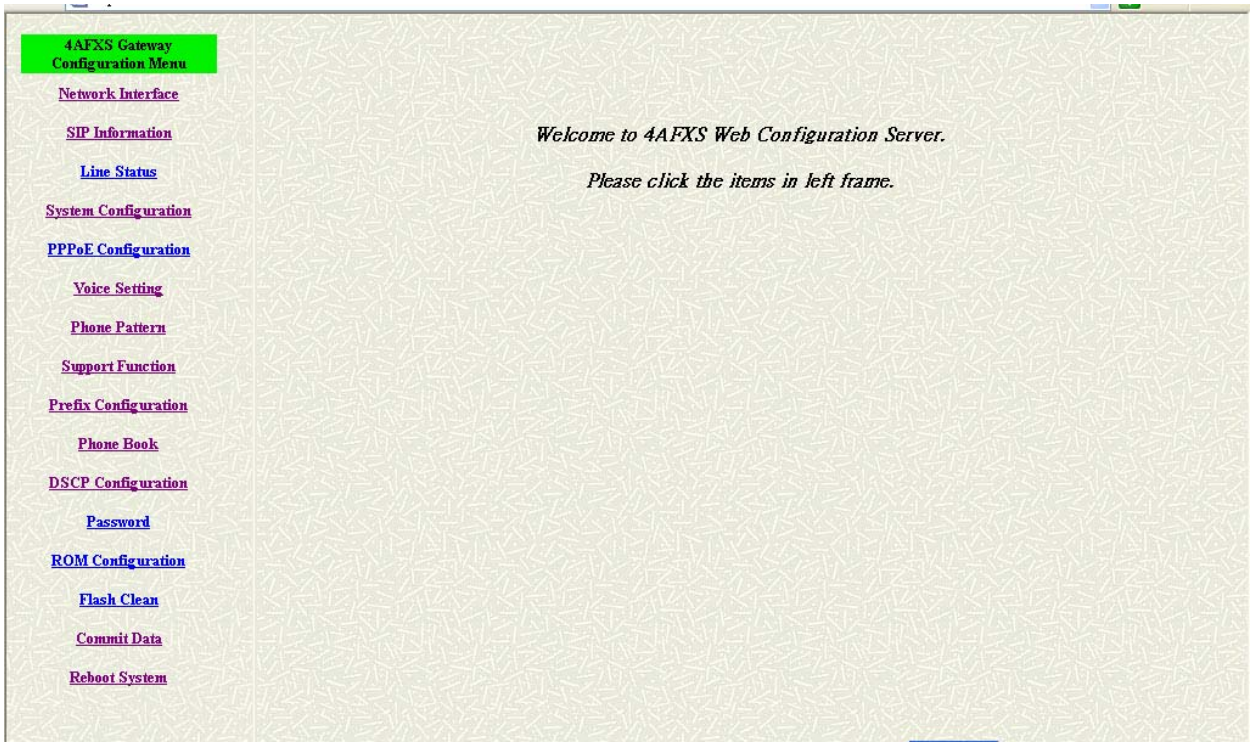


Figure 2-2 FXS Gateway web configuration welcome screen

The following table describes the screen.

Table 2-1 Navigation Panel Links

LABEL	DESCRIPTION
Network Interface	This link takes you to a screen where you can configure the FXS Gateway Network Interface Information.
SIP Information	This link takes you to a screen where you can setup up SIP Information.
System Configuration	This link takes you to a screen where you can set up System Configuration.
PPPoE Configuration	This link takes you to a screen where you can set up PPPoE Configuration.
Voice Setting	This link takes you to a screen where you can set up Voice Configuration.
Phone Pattern	This link takes you to a screen where you can set up Phone Pattern Configuration.
Support Function	This link takes you to a screen where you can set up Support Functions Configuration.
Prefix Configuration	This link takes you to a screen where you can set up Prefix Configuration.

LABEL	DESCRIPTION
Phone Book	This link takes you to a screen where you can set up Phone Book Information.
DSCP Configuration	This link takes you to a screen where you can set up DSCP Configuration.
Password	This link takes you to a screen where you can change passwords.
ROM Upgrade	This link takes you to a screen where you can change ROM Upgrade configuration.
Flash Clean	This link takes you to a screen where you can click flash memory information and configuration.
Commit Data	This link takes you to a screen where you can click save your changes to the non-volatile memory.
Reboot System	This link takes you to a screen where you can click to reboot FXS Gateway.

2.5 Saving Your Configuration

Click [OK] to save your changes back to the VoIP Gateway volatile memory. The VoIP Gateway loses these changes if it is turned off or loses power, so use the [Commit Data] link on the navigation panel to the left to save your changes to the non-volatile memory when your are done configuring.

2.6 Navigating the Web Configurator

The web configuration uses one level. For example, to configure [Network Interface], click the link on the navigation panel to open the configuration screen.

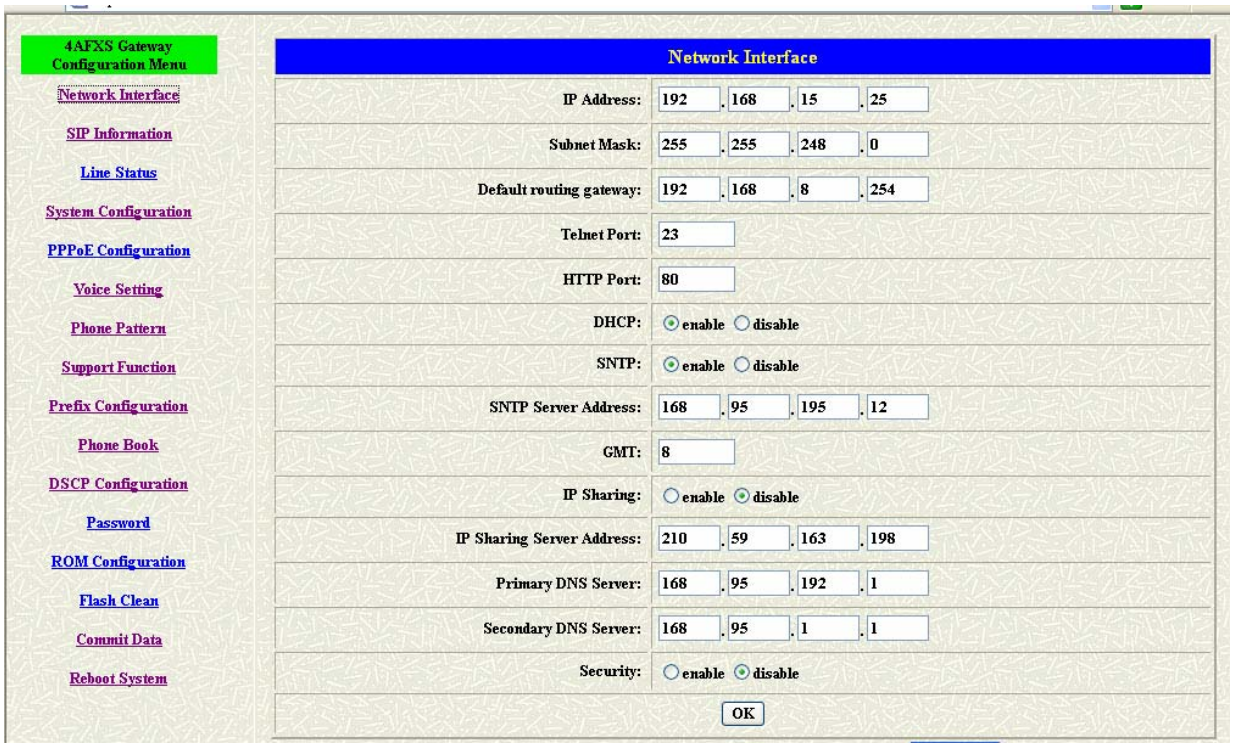


Figure 2-3 Network Interface Screen

Chapter 3
Initial Configuration

This Chapter covers the basic configuration needed to set up and use the FXS Gateway. Refer to the other part describes about individual fields within screens.

3.1 Initial Configuration Overview

This chapter describes the procedure for the initial configuration of the VoIP Gateway. Refer to the relevant chapters in this User's Guide for descriptions of the fields and buttons within individual screens.

3.2 General Configuration

The FXS Gateway is with a default IP address of 10.1.1.3 and a subnet mask of 255.0.0.0.

3.3 Static IP address

Step 1. Configure the IP address of this unit. Click [Network Interface] on the navigation panel. In the Network Interface screen, type a new IP address, subnet mask and the default routing gateway (e.g. IP Address: 192.168.13.4, Subnet mask: 255.255.248.0, Default routing gateway: 192.168.8.254) and click the OK button.

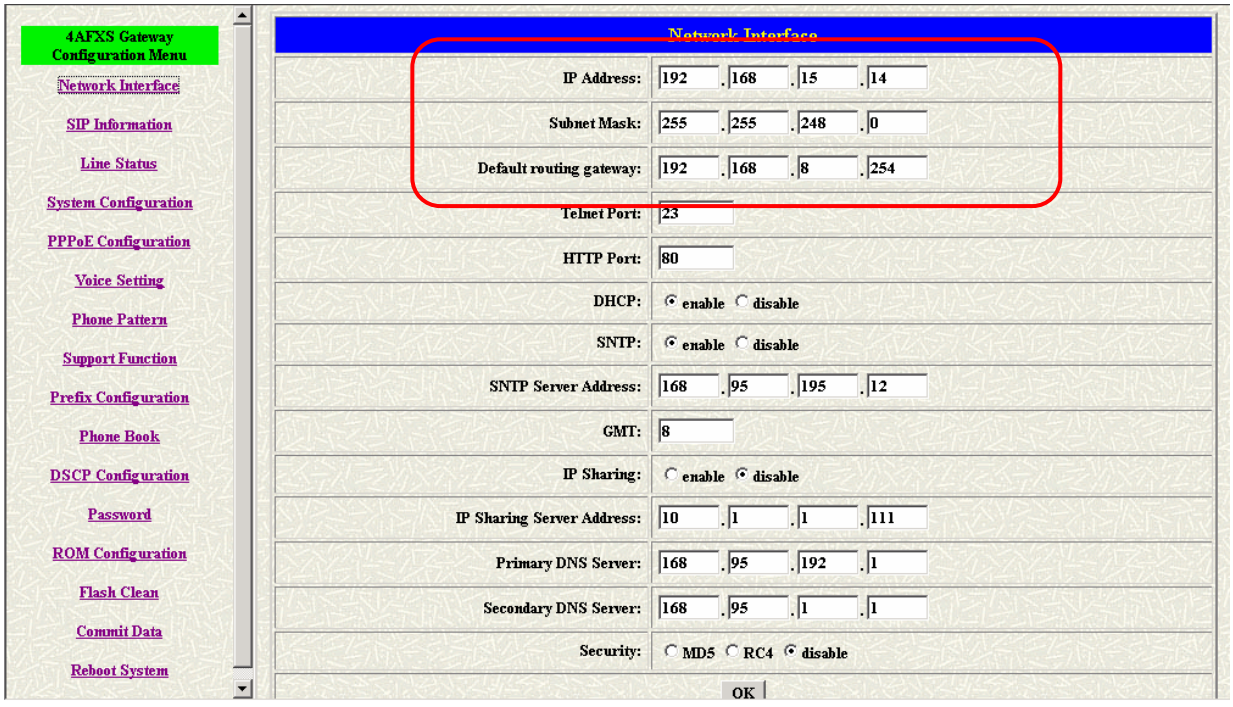


Figure 3-1 Network Interface

Step 2. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the [Commit] button.

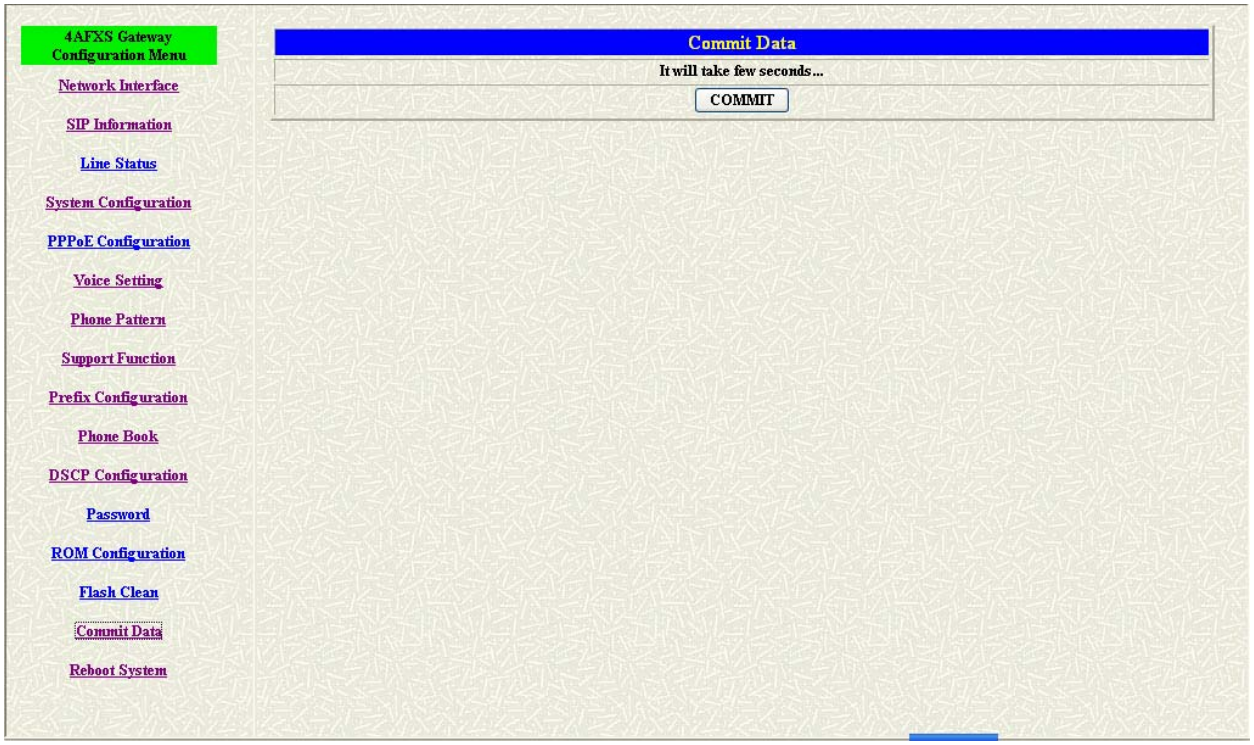


Figure 3-2 Commit Configuration Data

Step 3. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

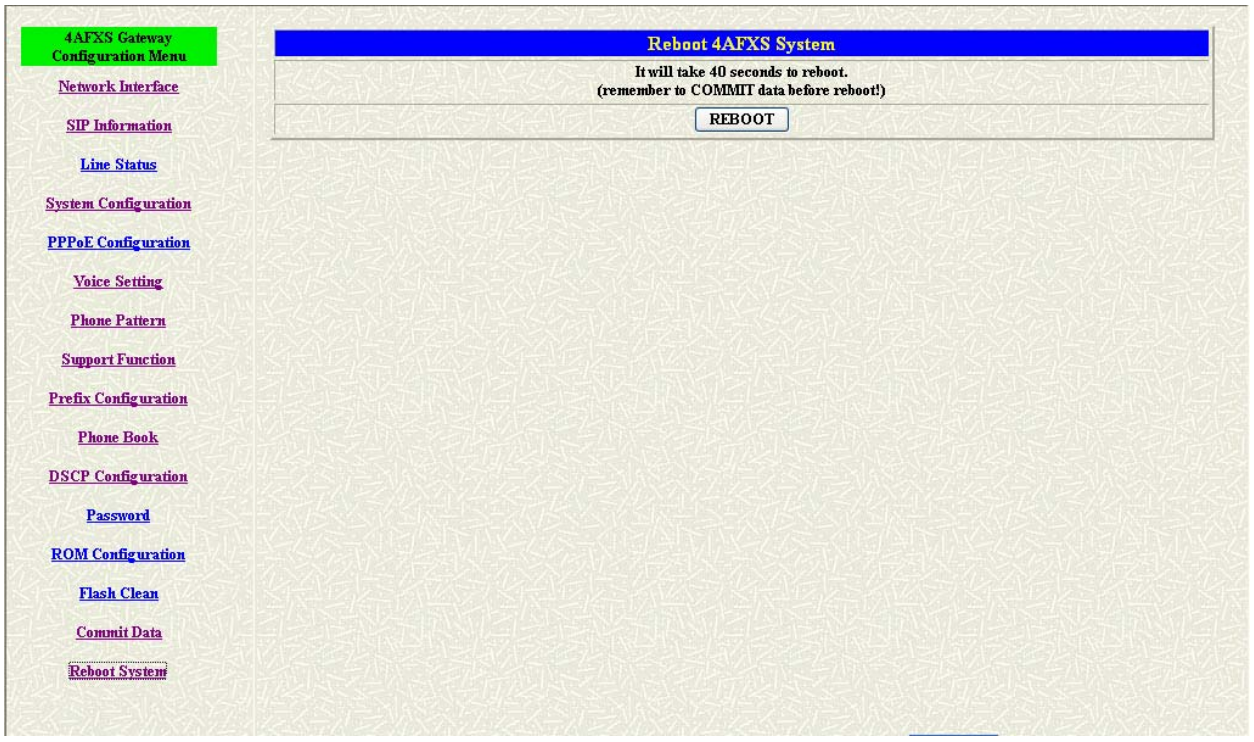


Figure 3-3 Reboot FXS System

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

3.4 DHCP mode

Step 1. Configure the FXS Gateway IP mode to DHCP Mode. Click [Network Interface] on the navigation panel. In the Network Interface screen, enable the DHCP function if you are using the cable modem or DHCP server and click the [OK] button.

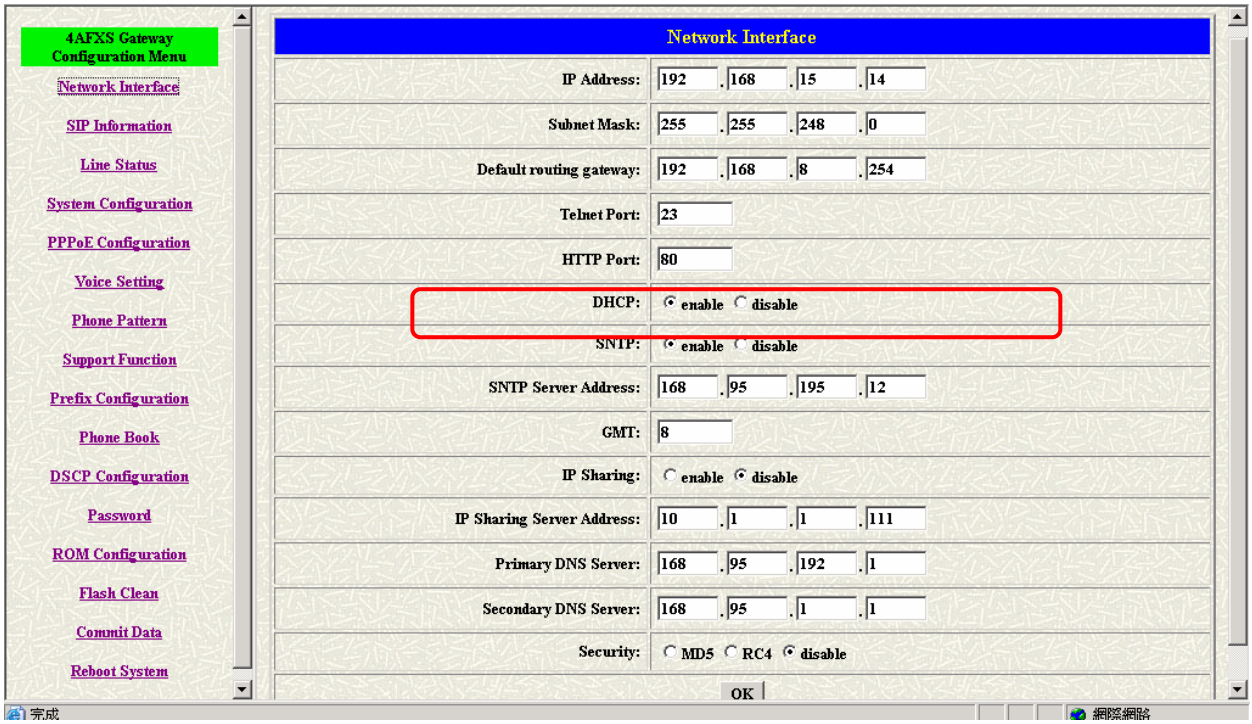


Figure 3-4 Network Interface

Step 2. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the Commit button.

Step 3. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

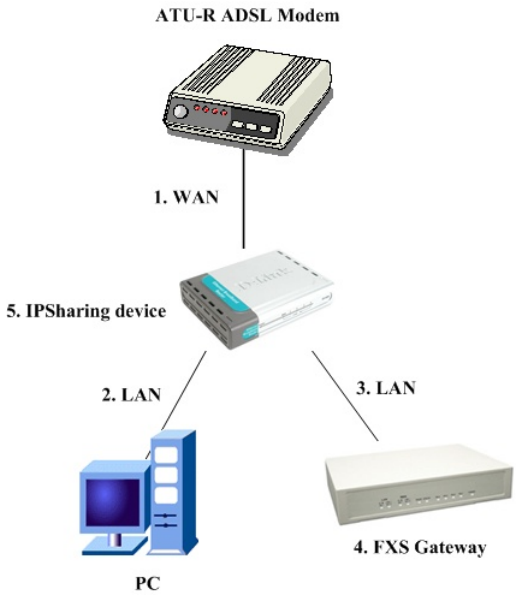
3.5 IP Sharing Configuration

3.5.1 One Sets FXS Gateway

The function is only for the user who is using the IP Sharing device. It is meaning that Gateway is connected to the IP Sharing device.

The IP Sharing Device must support the DMZ or Virtual server functions

An e.g. such as ADSL network is in the following.



Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

Step 3. One can also assign a fixed IP address, which belongs to the same network segment as the LAN interface of IP Sharing device.

Step 4. FXS Gateway must enable the IP Sharing function for the fixed / dynamic WAN IP Address.

Note:

For the Dynamic WAN IP Address, a valid Proxy for FXS Gateway to get registration on is a necessary. On the other words, it is not workable in Peer-to-Peer mode while your IP sharing device is under dynamic WAN IP Address.

Step 5. IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ; some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP message to 192.168.1.5.

Please see following for example:

>Advanced setting > NAT setting > DMZ Host setting

DMZ Host setting

☐ **Activate DMZ**

DMZ Host IP: 192.168.1.5

Step 6. Configuring the FXS Gateway IP address for IP Sharing Mode. Click [Network Interface] on the navigation panel. In the Network Interface screen, enter the IP address, Subnet mask and the default gateway in the network table. Please follow up your IP Sharing device

Step 7. Enable the IP sharing function and put the static IP address in the IP Sharing server address (e.g. 210.59.163.198) and click the OK button.

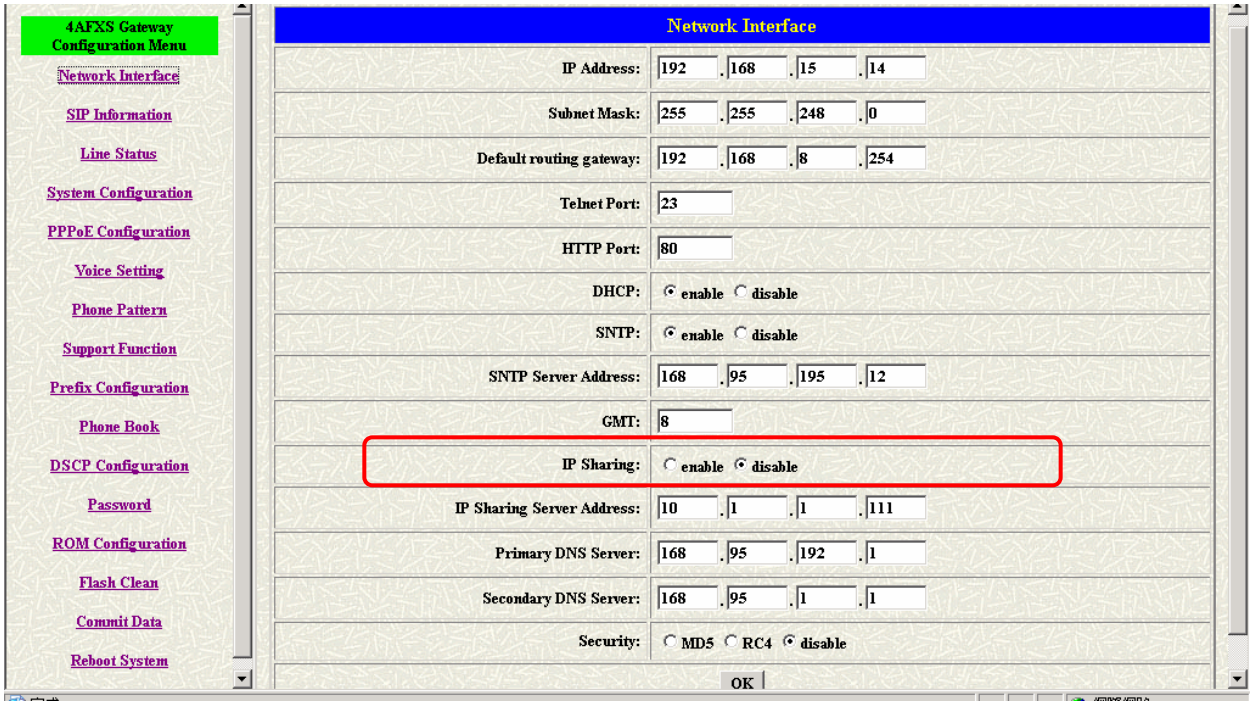


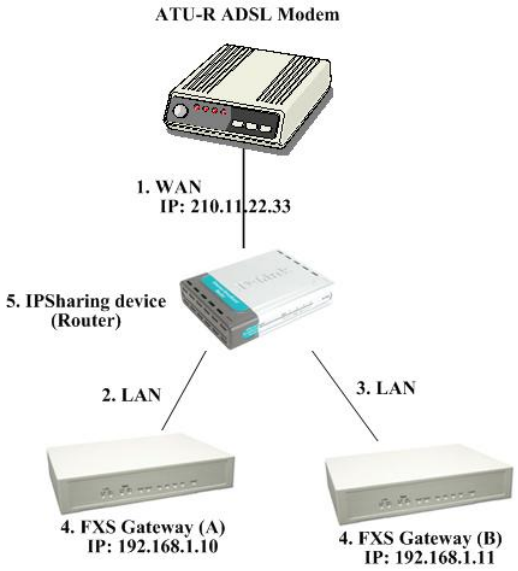
Figure 3-5 Enable the IP sharing function

Step 8. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the Commit button.

Step 9. Click [Reboot System] on the navigation panel. In the VoIP Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 10. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

3.5.2 Two sets attached to IP Sharing Device(Router)



1. Assign an IP address to each set using DHCP or fixed address.
2. Enable the IP Sharing function for each set using following command.
   Fixed IP Address – *usr/config$ ifaddr –ipsharing 1 210.11.22.33*
3. Configure separate SIP port and RTP port for each set to prevent from port conflict. For example, if set A uses the default settings (SIP port: 5060, RTP port: 16384), you must change set B's setting to SIP port equal to 5061 and RTP port equal to 26384 for instance.
   Change SIP port – *usr/config$sip –port 5061*
   Change RTP port– *usr/config$sip –rtp 26384*
4. Use the Port Forwarding or Port Redirection function provided by IP Sharing device (Router). See following for example.

>Advanced setting > NAT setting > Port Redirection

Active Configuration

Items	Service name	Protocol	Actual Port	Virtual IP	Virtual Port	Enable
1	1	UDP	5060	192.168.1.10	5060	V
2	2	UDP	16384	192.168.1.10	16384	V
3	3	UDP	16394	192.168.1.10	16394	V
4	4	UDP	5061	192.168.1.11	5061	V
5	5	UDP	26384	192.168.1.11	26384	V
6	6	UDP	26394	192.168.1.11	26394	V
7		---	0		0	X
8		---	0		0	X

9		---	0		0	X
10		---	0		0	X

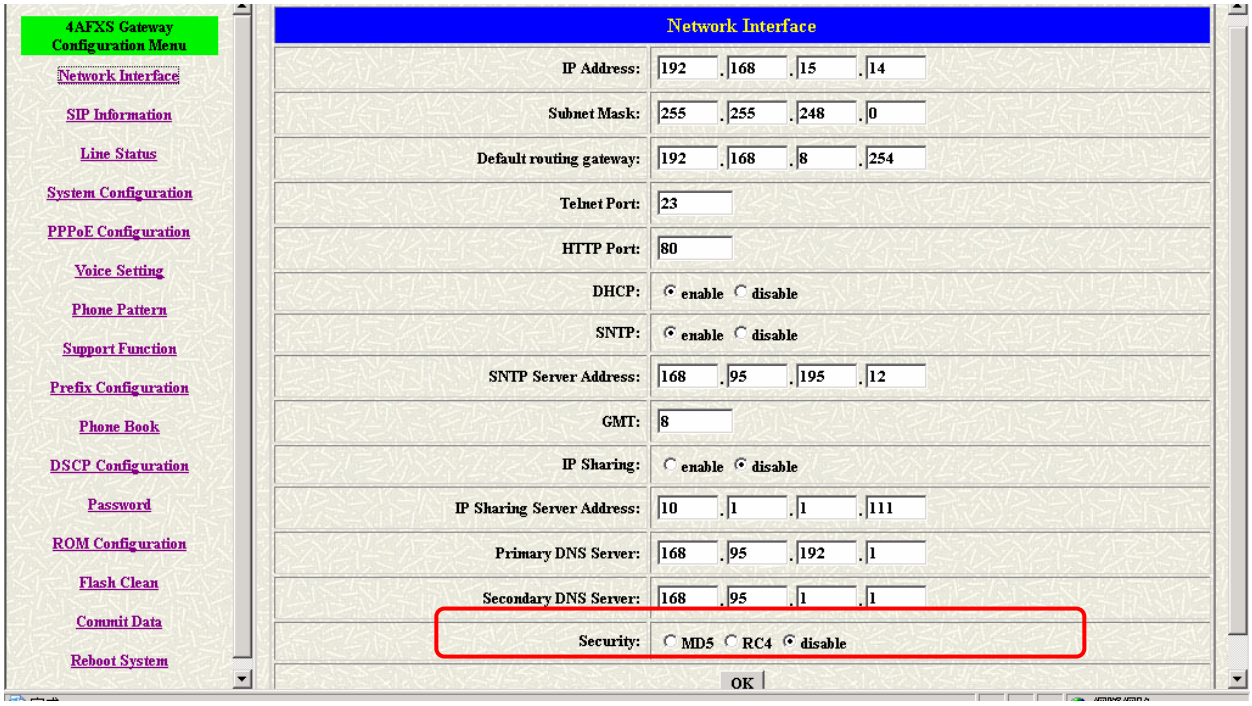
Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

1. Different Vendor's Router will have different appearance of setting.
2. Once you set the DMZ Host, you don't need to configure the Port Forwarding and vice versa.
3. If there is only one FXS Gateway attached to the IP Sharing device, it is recommanded to use DMZ Host setting to enable the NAT traverse and disable the Port Forwarding.
4. If there are two or more sets of FXS Gateway attached to the IP-Sharing device, please configure the Port Redirection (Forwarding) to enable the NAT traverse and disable the DMZ Host.
5. After the IP Sharing configuration of FXS Gateway and IP Sharing device is complete, you must reboot the FXS Gateway to activate the new settings.

3.6 Security

3.6.1 This function only work with Welltech proxy server, When you active MD5 it will encrypt all the device message of you choice encrypt method on the network.



Chapter 4
Making a VoIP Call

This Chapter covers the basic configuration the gateway for making VoIP calls. One is the Peer-to-Peer mode, Proxy routed mode and Gateway mode. The configurations and functions are different. Please make sure about the mode you want and follow up the step to configure your gateway.

4.1 Configure the gateway into the Peer-to-Peer mode

Step 1. Configure the FXS Gateway SIP information. Click [SIP information] on the navigation panel. In the SIP information screen, select Peer-to-Peer Mode function, set line number (e.g. Line1 Number 1001, Line2 Number: 1002) and click the [OK] button.

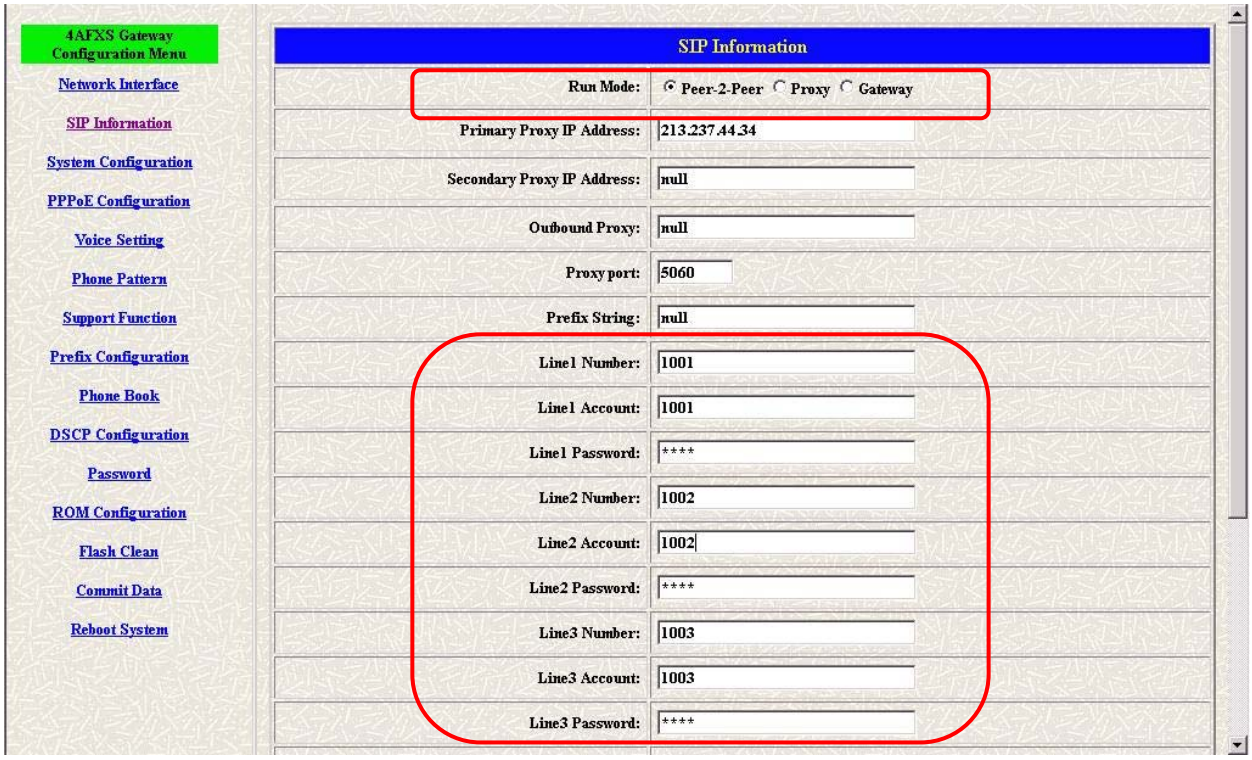


Figure 4-1 SIP Configuration – Peer to Peer mode Screen

Step 2. Configure the FXS Gateway Phone Book. Click [Phone Book] on the navigation panel. In the Phone Book screen, enter the Index, Name, IP address and e164 (phone number) of the destination and click the Add Data button.

Figure 4-2 Phone Book

Step 3. E.g. enter the Index: 1, Name: test, e164 No.: 608, IP address: 192.168.13.75 and of the destination and click the [Add Data] button.

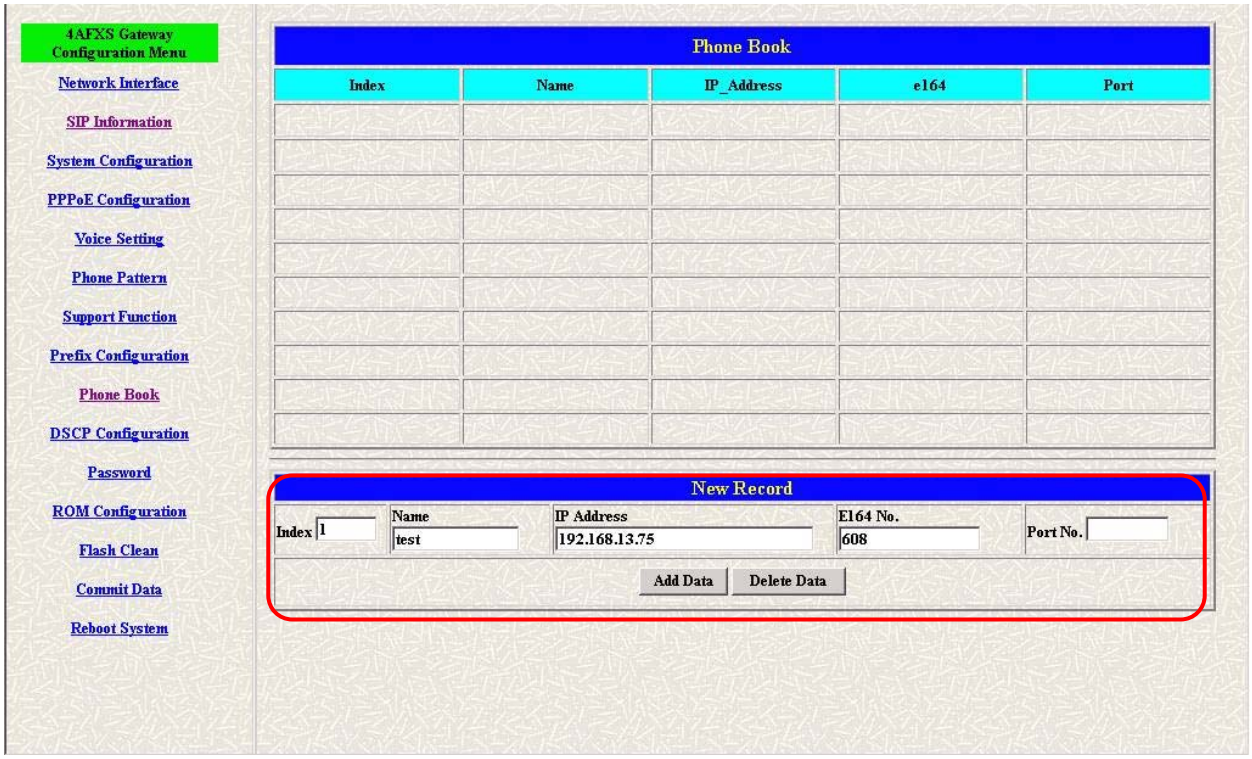


Figure 4-3 Phone Book – New Record

Step 4. Phone Book list will display the first index.

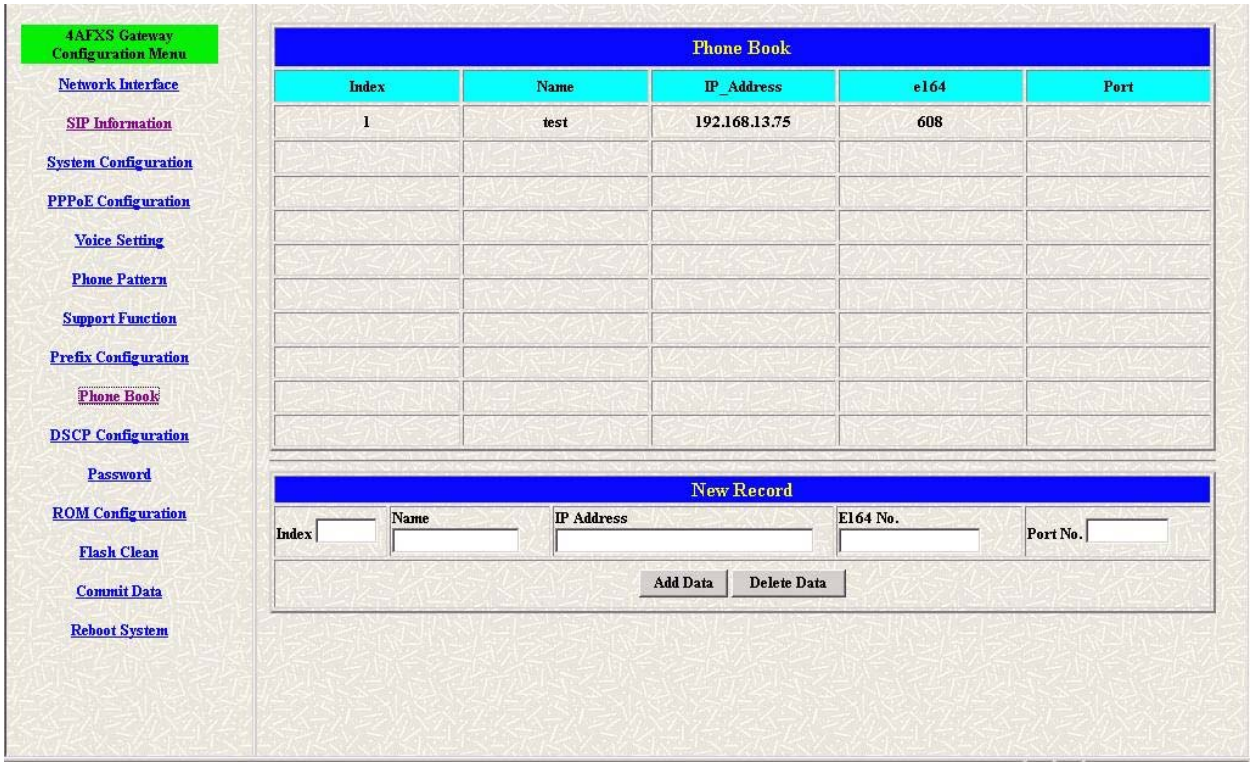


Figure 4-4 Phone Book

Step 5. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the [Commit] button.

Step 6. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

4.2 Configure the gateway into the Proxy routed mode

Step 1. Configure the FXS Gateway SIP Configuration. Click SIP Information on the navigation panel. In the SIP Information screen, select Proxy routed Mode function.

Step 2. To change the SIP information from your service provider Proxy IP Address, Line1 Number, Line1 Account, Line1 Password, (e.g. Proxy IP Address: 192.168.14.155, (e.g. Line1 Number: 1001, Line1 Account: 1001, Line1 Password: 1001, Line2 Number: 1001, Line2 Account: 1001, Line2 Password: 1001), and click the OK button.

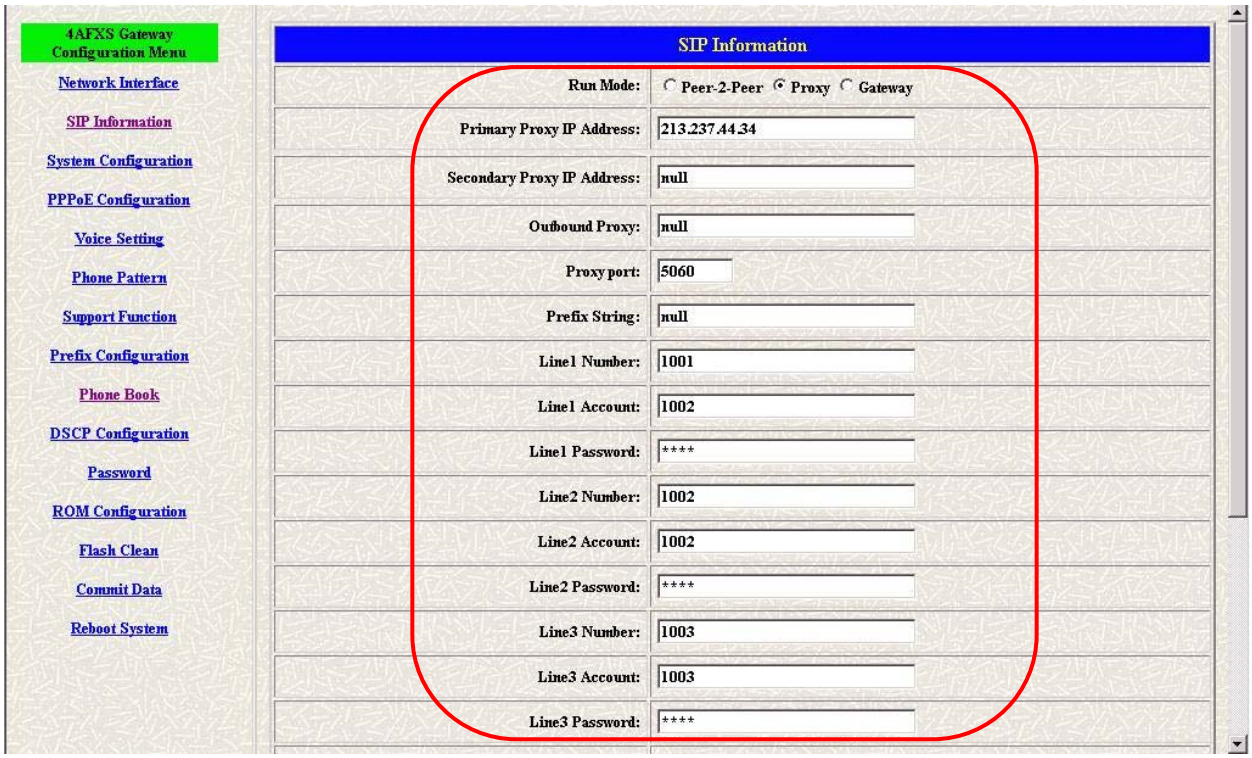


Figure 4-5 Configure the Proxy info

Step 3. Click Commit Data on the navigation panel. In the Commit Data screen, click the Commit button. In the Commit Data screen to Display Commit to Flash OK!, When the Commit Data Ok.

Step 3. Click Reboot Data on the navigation panel. In the Reboot FXS System screen, click the Reboot button. It will take 40 seconds to reboot.

4.3 Configure the gateway into the Gateway routed mode

Step 1. Configure the FXS Gateway SIP Configuration. Click SIP Information on the navigation panel. In the SIP Information screen, select Gateway routed Mode function.

Step 2. To change the SIP information from your service provider Proxy IP Address, Line1 Number, Lin1 Account, Line1 Password, (e.g. Proxy IP Address: 192.168.14.155, (e.g. Line1 Number: 6091, Line1 Account: 6091, Line1 Password: 6092), and click the OK button.

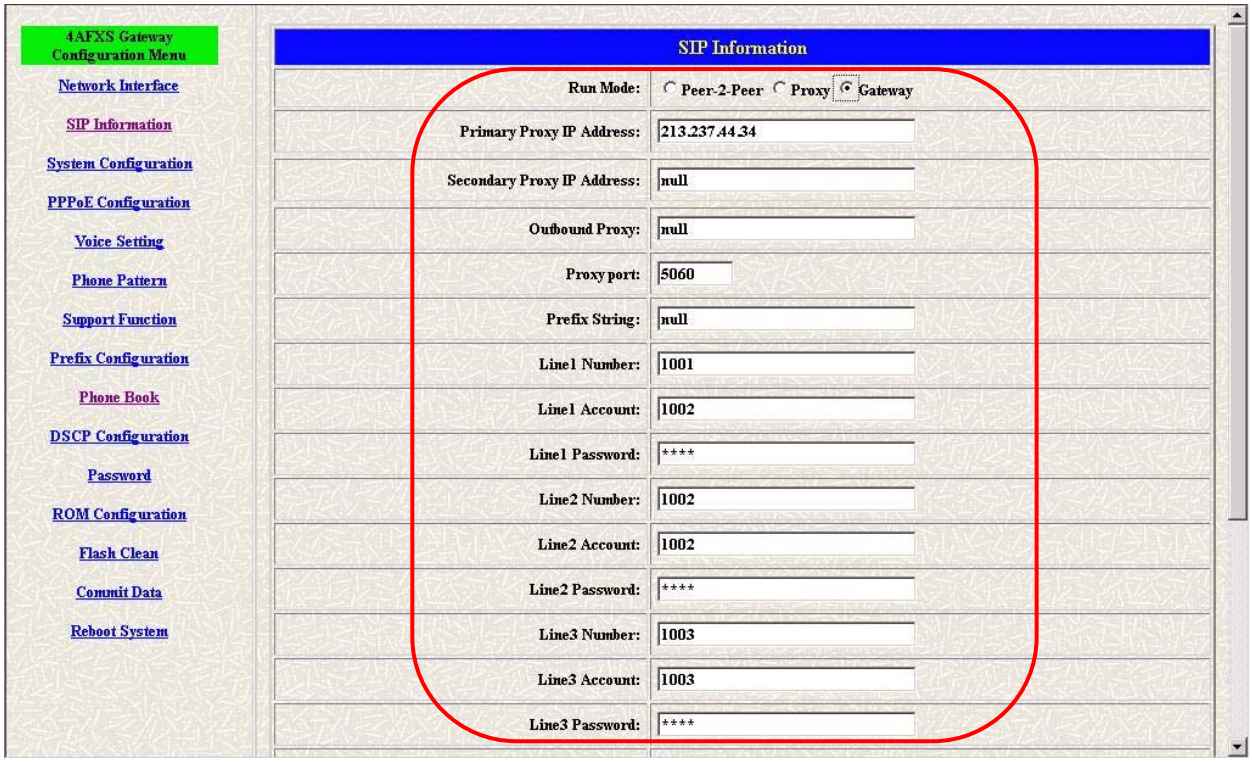


Figure 4-6 Configure the Proxy info

Step 3. Click Commit Data on the navigation panel. In the Commit Data screen, click the Commit button.

Step 4. Click Reboot Data on the navigation panel. In the Reboot FXS System screen, click the Reboot button. It will take 40 seconds to reboot.

Chapter 5
Upgrade ROM Version

This Chapter covers the basic how to upgrade FXS Gateway ROM Version.

5.1 Before you start downloading

Step 1. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.

Step 2. Remember the current configuration, such as [SIP Information], [Phone Book].

5.2 Update Application Version

Step 1. Update the FXS Gateway ROM Version. Click [ROM Upgrade] on the navigation panel. In the [ROM Configuration] screen, type a Server IP address, Target File Name, Method, Target File Type (e.g. Server IP Address: 192.168.13.88, Target File Name: 4asipfxs.108, Method: TFTP, Target File Type: Application image) and click the [OK] button.

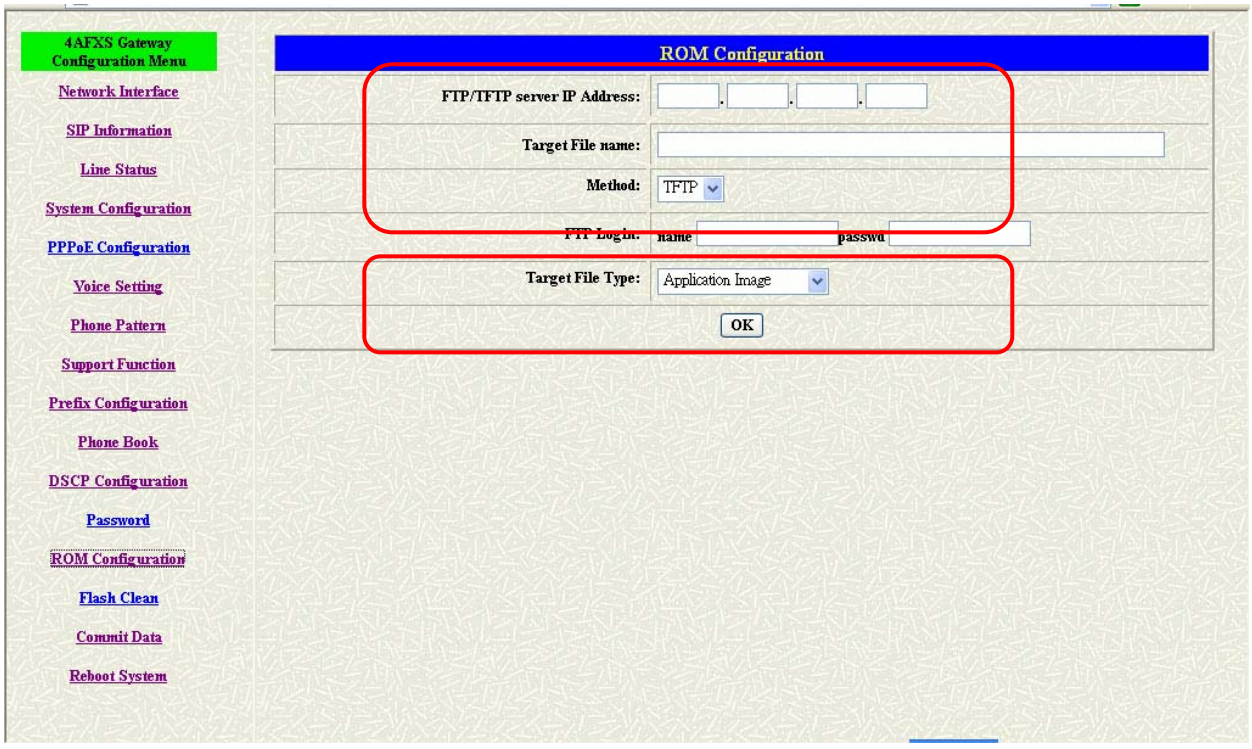


Figure 5-1 ROM Configuration

Step 2. When the ROM upgrade is finished. The screen will display [Please issue FLASH CLEAN to consist software version.] information.

Figure 5-2 ROM File Upgrade ok

Step 3. Click [Flash Clean] on the navigation panel. In the Flash Clean screen, click the [CLEAN] button.

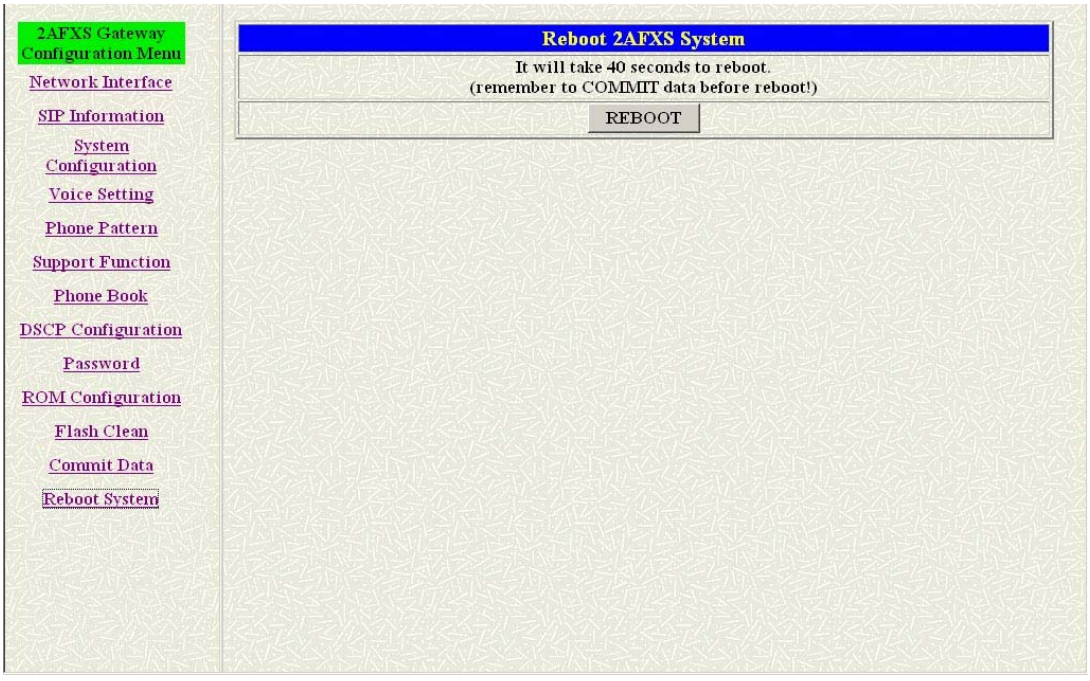


Figure 5-3 Flash Clean

Step 4. In the Flash Clean screen to Display [Flash cleaned!! Please reboot your system!!], When the Flash Clean Ok.

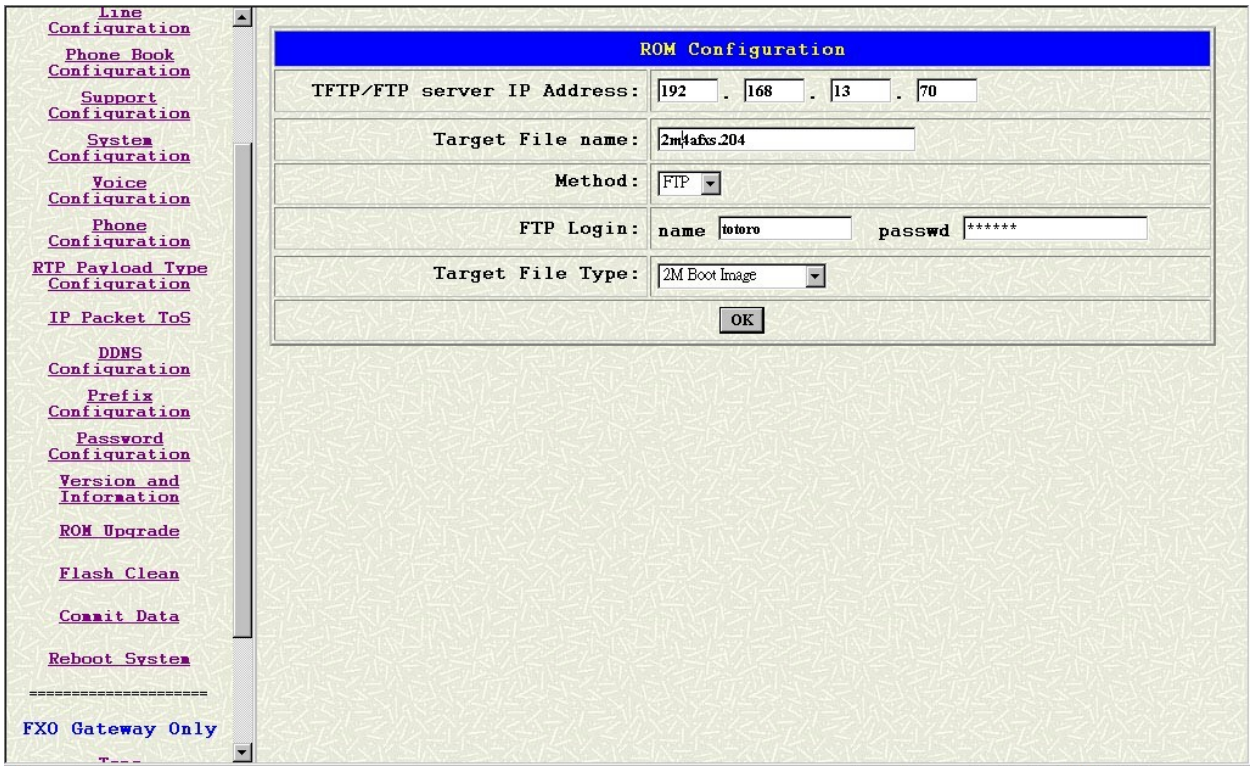
Step 5. Click [Reboot System] on the navigation panel. In the Reboot FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 6. Close the current browser windows and launch your web browser again.

Enter the IP address in the Location or Address field.

5.3 Update Boot2m Version

Step 1. Update the FXS Gateway 2mROM Version. Click [ROM Upgrade] on the navigation panel. In the [ROM Configuration] screen, type a Server IP address, Target File Name, Method, Target File Type (e.g. Server IP Address: 192.168.4.71, Target File Name: 2m4afxs.204, Method: FTP, FTP Login name: totoro, passwd: totoro, Target File Type: 2m Boot image) and click the [OK] button.



Step 2. When the ROM Upgrade file ok. The screen will display [Please issue FLASH CLEAN to consist software version.] information.

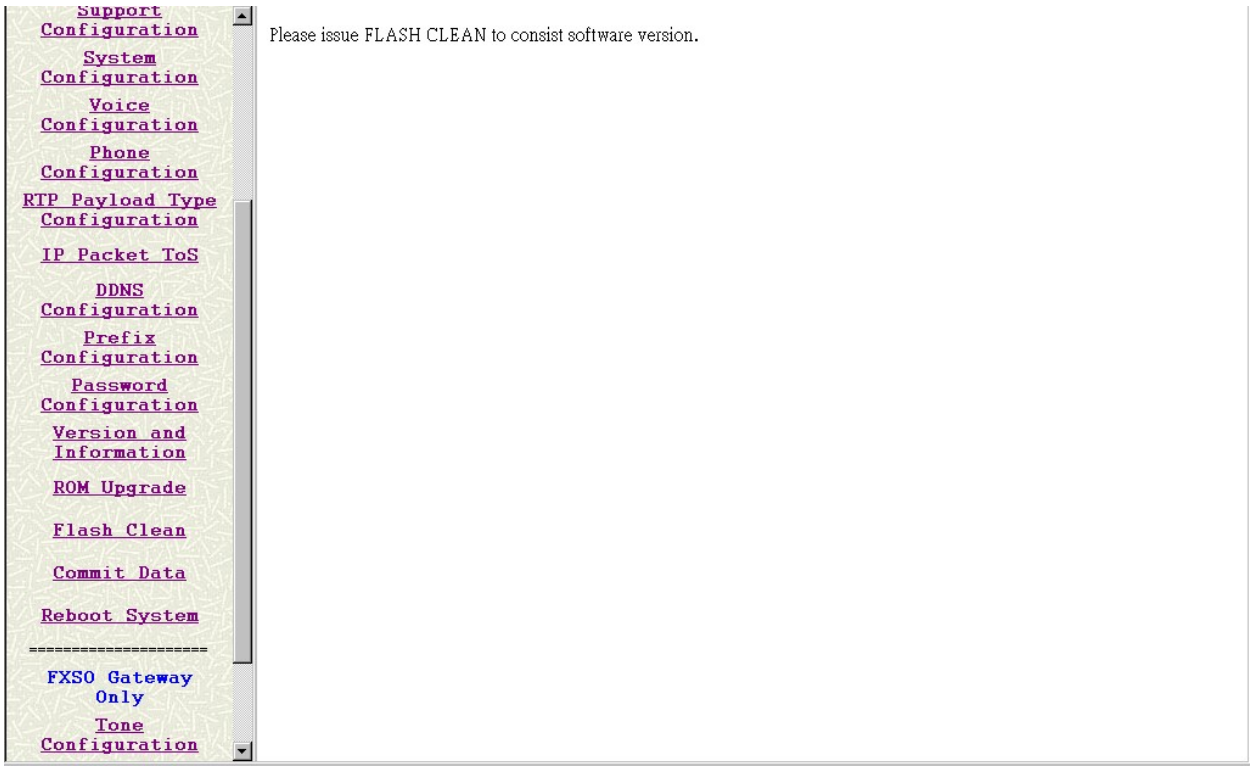


Figure 5-4 ROM File Upgrade ok

Step 3. Click [Flash Clean] on the navigation panel. In the Flash Clean screen, click the [CLEAN] button.

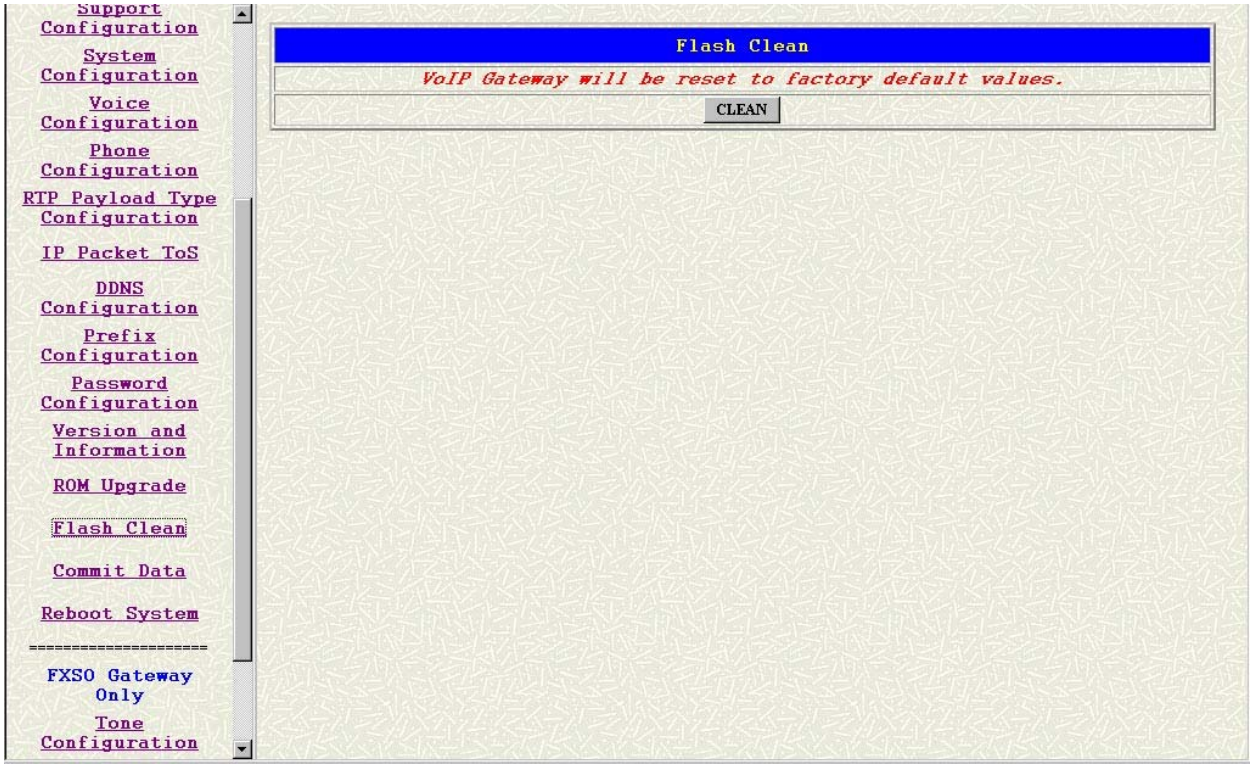


Figure 5-5 Flash Clean

Step 4. In the Flash Clean screen to Display [Flash cleaned!! Please reboot your system!!], When the Flash Clean Ok.

Figure 5-6 Flash Clean OK

Step 5. Click [Reboot system] on the navigation panel. In the Reboot FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 6. Close the current browser windows and launch your web browser again. Enter the IP address in the Location or Address field.

Chapter 6
Network Interface Screen

This Chapter covers setup Network Interface identification information for FXS Gateway.

6.1 Network Interface Overview

The web configuration provides Network Interface screen.

6.2 Network Interface Screen

Click [Network Interface] in the navigation panel and open the Network Interface Screen.

Use this screen to setup Network Interface identification information for the FXS Gateway.

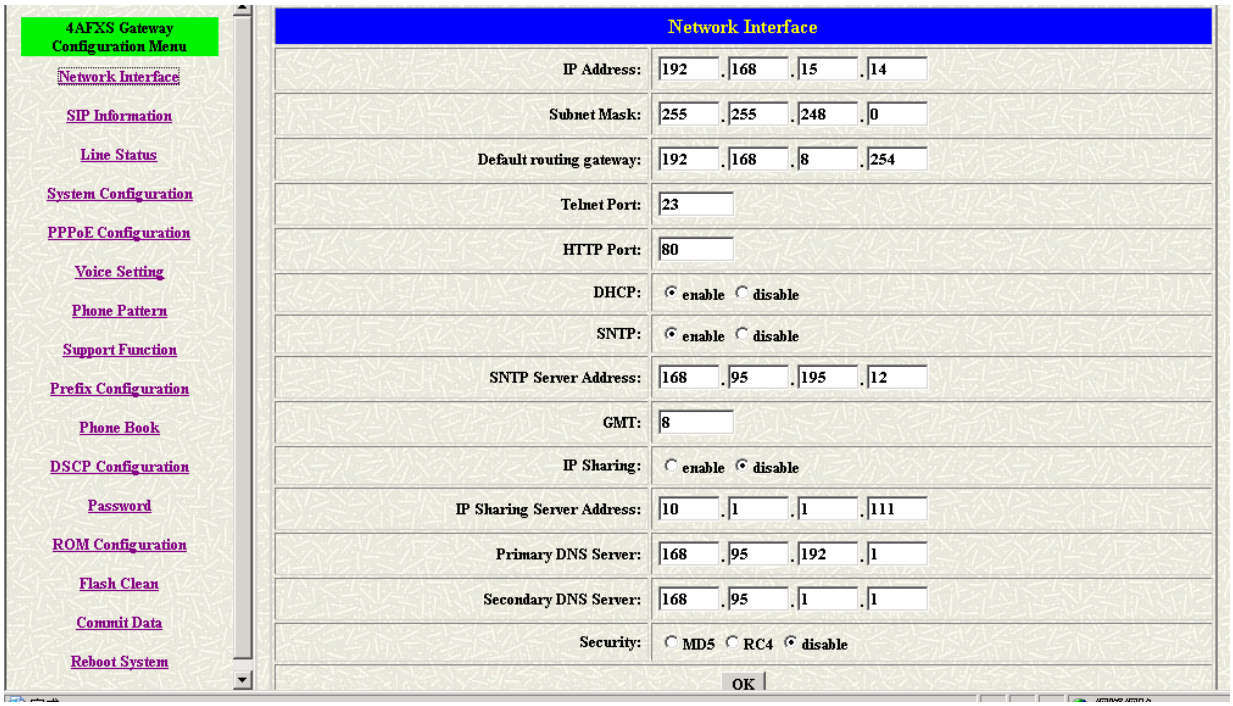


Figure 6-1 Network Interface

The following table describes this screen.

Table 6-1 Network Interface

LABEL	DESCRIPTION
IP Address	Enter the IP Address of the FXS Gateway in dotted decimal notation for e.g. 192.168.13.4. Range of IP Address setting (0.0.0.0~255.255.55.255).
Subnet Mask	Enter the IP Subnet Mask of your FXS Gateway in dotted decimal notation for e.g. 255.255.248.0.
Default Routing	Enter the IP Address of the default-outgoing gateway of your FXS

LABEL	DESCRIPTION
Gateway	Gateway in dotted decimal notation for e.g. 192.168.8.254.
DHCP	Select enable/disable Dynamic Host Configuration.
SNTP	Select enable/disable Simple Network Time Protocol.
SNTP Server Address	Set specifies a SNTP Server as network time source in dotted decimal notation for e.g. 168.95.192.12.
GMT	Set local time zone according to GMT e.g. 8.
IP Sharing	Select enable IP Sharing function, when you specify usage of and IP Sharing device.
IP Sharing Server Address	Enter specify a global fixed IP Address, user can add this IP Address in dotted decimal notation for e.g. 210.11.22.33. However, dynamic IP Address is not working in Peer-to-Peer mode.
Primary DNS Server	Enter the DNS IP Address in dotted decimal notation for e.g. 168.95.192.1
Secondary DNS Server	Enter the DNS secondary IP Address in dotted decimal notation for e.g. 168.95.1.1
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 7
SIP Information Screen

This Chapter covers setup SIP related parameters.

7.1 SIP Information Overview

The web configurator provides SIP Configuration screen.

7.2 SIP Information Screen

Click [SIP Configuration] in the navigation panel and open the SIP Information Screen.

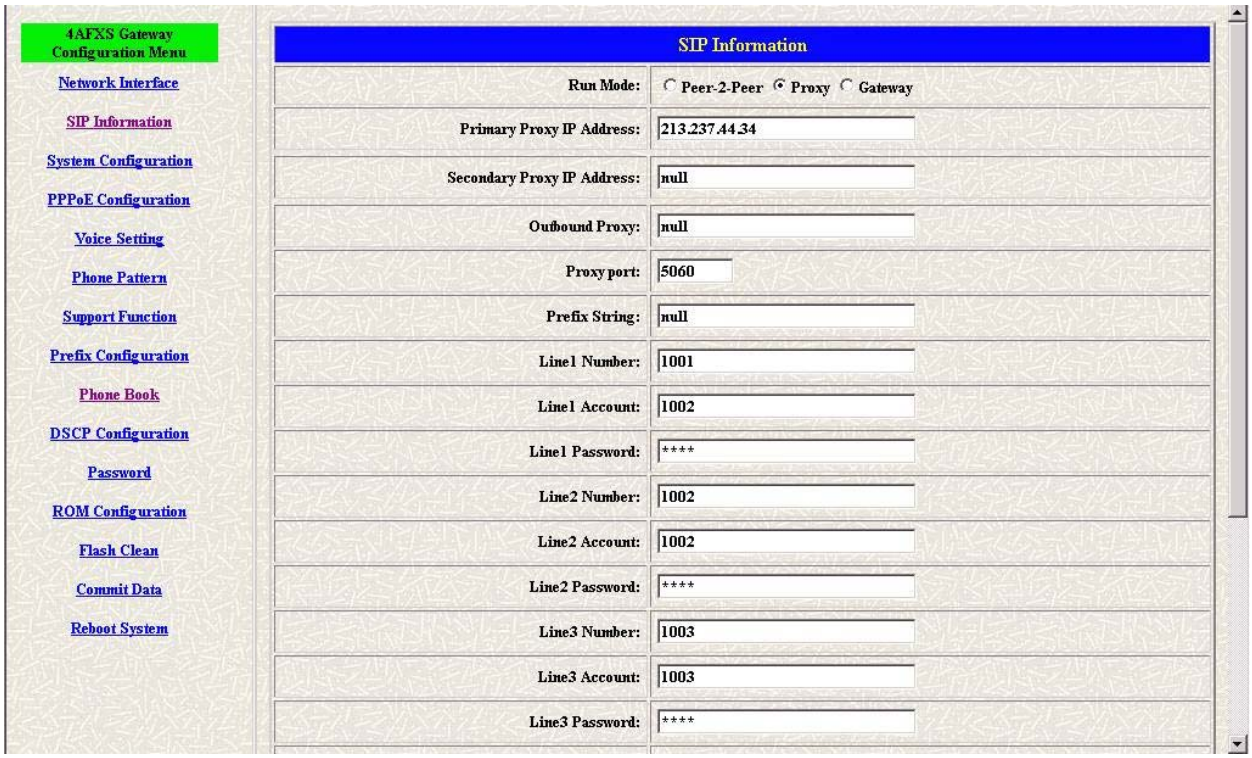


Figure 7-1 SIP Information

The following table describes this screen.

Table 7-1 SIP Information

LABEL	DESCRIPTION
RUN Mode	Select Proxy mode, Gateway mode or Peer-to-Peer mode. Select Gateway only setting channel 1 line number, account and password.
Proxy IP Address	Set Proxy IP Address in dotted decimal notation e.g. 213.237.44.34.
Second Proxy IP Address	Set redundancy second 2 Gatekeeper IP Address in dotted decimal notation.
Outbound Proxy	Set IP Address or URL address (Domain Name Server must be

LABEL	DESCRIPTION
	configured. Please refer to Network Configure) of outbound Proxy server.
Proxy Port	SIP local UDP port number (5060~5070), default: 5060.
Prefix String	Set specific prefix string, use it when User ID contains alphabets.
Line X Number	Set Line X Number.
Line X Account	Set Line X Account Name.
Line X Password	Set Line X Account Password.
SIP Port	Set SIP port number, example 5060.
RTP Port	Set RTP port number, example 16384.
Expire	Used to inform proxy server the valid duration of the registration information.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 8
System Configuration Screen

This Chapter covers System Information and configuration.

8.1 System Configuration Overview

The web configuration provides System Configuration screen.

8.2 System Configuration Screen

Click [System Configuration] in the navigation panel and open the [System Configuration] Screen.

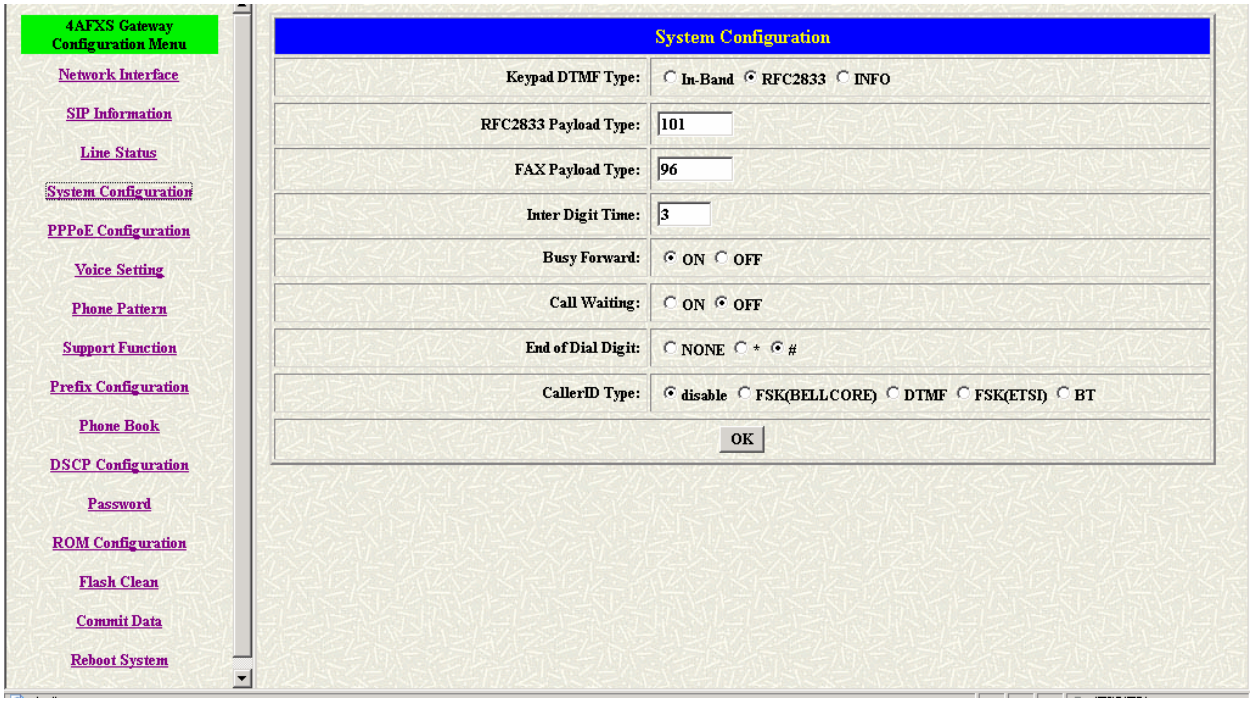


Figure 8-1 System Configuration

The following table describes this screen.

Table 8-1 System Configuration

LABEL	DESCRIPTION
Keypad Type	Select In-Band, RFC2833 or SIP info on DTMF replay type
RFC2833 Payload Type	RFC2833 Payload Type (range: 96~128 inter-used:100,102~105)
FAX Payload Type	Set Fax Payload Type (range: 96 or 101, default: 96)
Inter Digit Time	Set the DTMF inter digit time (second)
CallerID Type	Set CallerID Type (Disable, FSK, DTMF). Support Bell Core and DTMF callerID function. After the first ring at destination site, device will send line number as callerID to called site.

LABEL	DESCRIPTION
Busy Forward	Set enable or disable to route the call to the next line (While the line number is not matched or engaged).
End of Dial Digit	Set end of dial key as NONE, *, or #.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 9

PPPoE Configuration Screen

Click [PPPoE Configuration] in the navigation panel and open the [PPPoE Configuration] Screen.

9.1 System Configuration Overview

The web configuration provides PPPoE Configuration screen.

9.2 PPPoE Configuration Screen

Click [PPPoE Configuration] in the navigation panel and open the [PPPoE Configuration] Screen.

Figure 9-1 PPPoE Configuration

The following table describes this screen.

Table 9-1 PPPoE Configuration

LABEL	DESCRIPTION
Device	Set PPPoe function to be On or Off.
User Name	Set PPPoE authentication User Name.
Password:	Set PPPoE authentication password.
Reboot After Remote Host Disconnection	Enable/Disable auto reboot after PPPoE disconnection
PPPoE Echo	Enable or Disable PPPoE echo request function

LABEL	DESCRIPTION
Request	
Other items	For reference only, cannot allow to be configured.

Chapter 10
Voice Configuration Screen

This Chapter covers voice is associated with the audio setting information.

10.1 Voice Configuration Overview

The web configuration provides Voice Configuration screen.

10.2 Voice Configuration Screen

Click [Voice Configuration] in the navigation panel and open the [Voice Configuration] Screen.

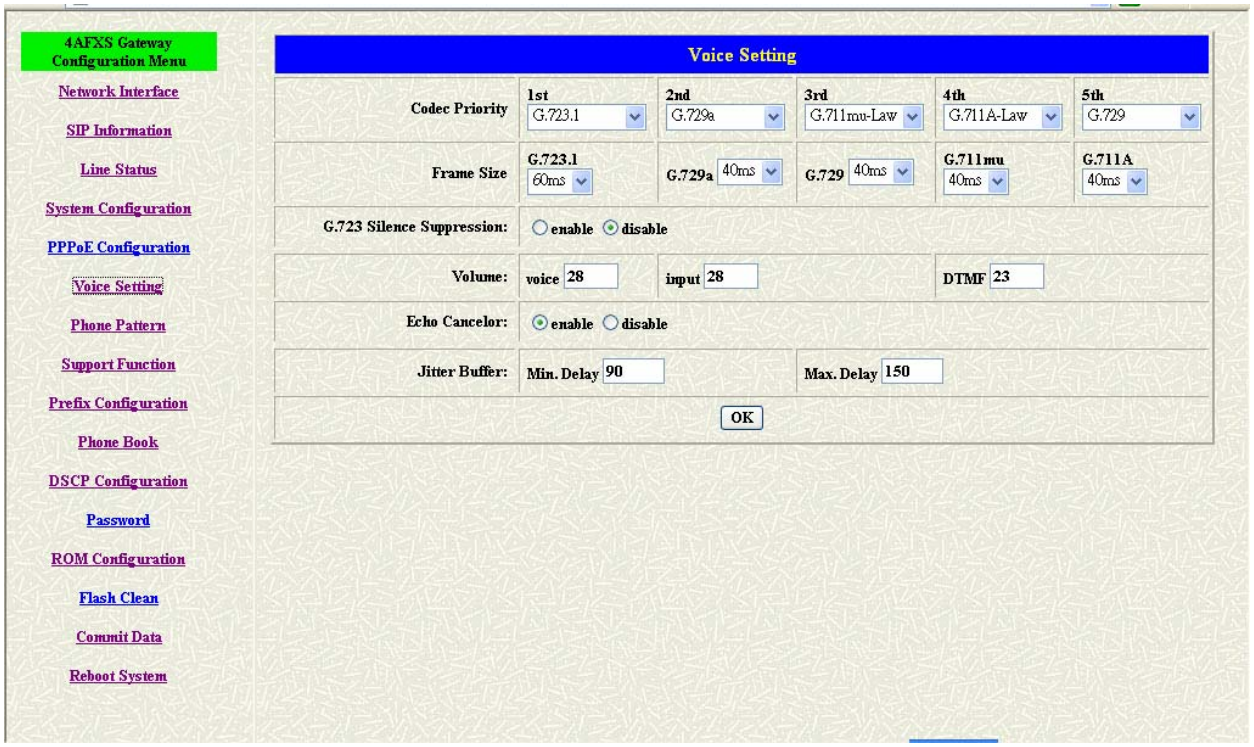


Figure 10-1 Voice Configuration

The following table describes this screen.

Table 10-1 Voice Configuration

LABEL	DESCRIPTION
Codec Priority	Set priority preference of installed codes, G.723, G.711A, G.711U and G.729.
Frame Size	Set Specify sending packet size, G.723: 30/60 ms, G.711A and G.711U: 20/40/60 ms, G.729 and G.729a: 20/40/60/80 ms. The smaller packet size, the shorter delay time. If network is in good condition, smaller sending packet size is recommanded.
G723 Silence Suppression	Select enable/disable for G723 Silence Suppression function.

LABEL	DESCRIPTION
Volume	Set voice volume stands for volume, which can be heard from FXS Gateway side (0~63, default: 28). Set input gain stands for volume, which the opposite party hears (0~38, default: 28). Set dtmf volume stands for DTMF volume/level (0~31, default: 23).
Echo Canceller	Setting enable/disable of echo canceller.
Jitter Buffer	Setting of jitter buffer min/max delay.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

Be careful to change the voice parameters, because this might cause incompatibility.

Chapter 11
Phone Configuration Screen

This Chapter covers FXS Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

11.1 Phone Configuration Overview

The Web Management Interface provides [Phone Configuration] screen.

11.2 Phone Configuration Screen

Click [Phone Configuration] in the navigation panel and open the [Phone Configuration] Screen.

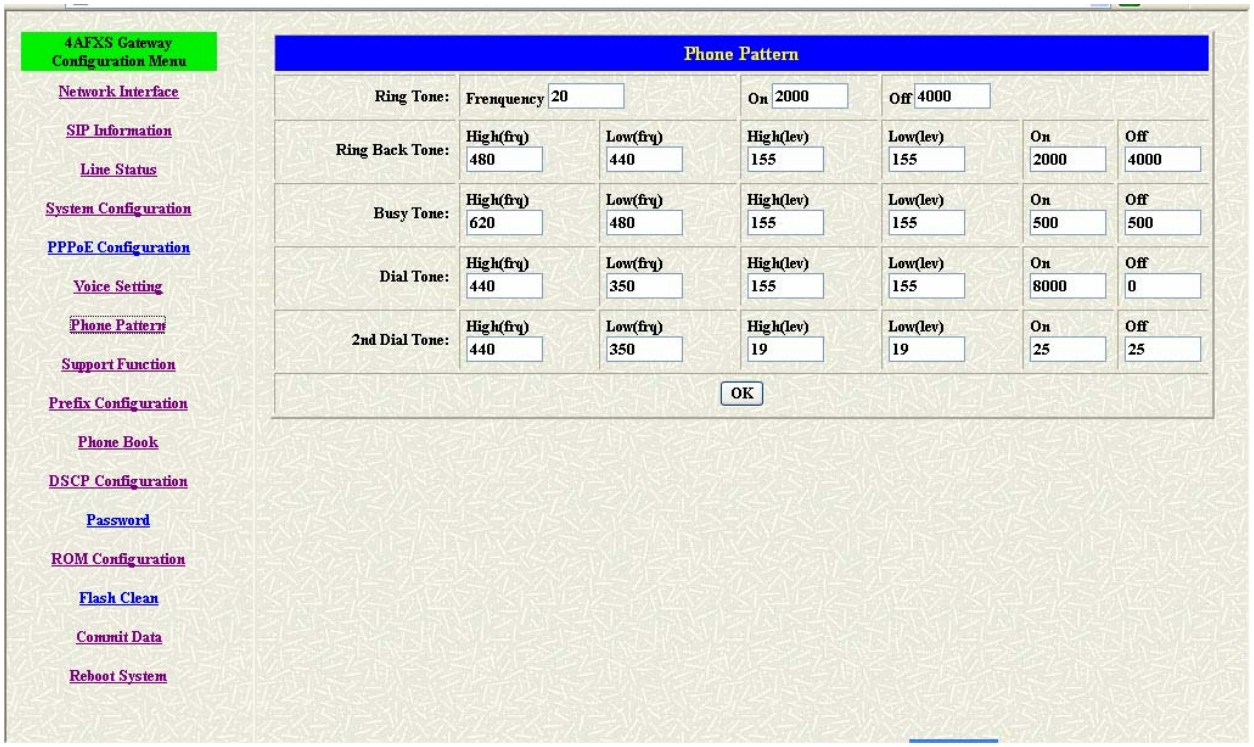

4AFXS Gateway Configuration Menu
Network Interface
SIP Information
Line Status
System Configuration
PPPoE Configuration
Voice Setting
Phone Pattern
Support Function
Prefix Configuration
Phone Book
DSCP Configuration
Password
ROM Configuration
Flash Clean
Commit Data
Reboot System
Phone Pattern
Ring Tone: Frenquency 20 On 2000 Off 4000
Ring Back Tone: High(frq) 480 Low(frq) 440 High(lev) 155 Low(lev) 155 On 2000 Off 4000
Busy Tone: High(frq) 620 Low(frq) 480 High(lev) 155 Low(lev) 155 On 500 Off 500
Dial Tone: High(frq) 440 Low(frq) 350 High(lev) 155 Low(lev) 155 On 8000 Off 0
2nd Dial Tone: High(frq) 440 Low(frq) 350 High(lev) 19 Low(lev) 19 On 25 Off 25
OK

Figure 11-1 Phone Pattern

The following table describes this screen.

Table 11-1 Phone Configuration

LABEL	DESCRIPTION
Ring Tone	Setting the played tone type, when FXS Gateway is receiving a call.
Ring Back Tone	Setting the played tone type, when FXS Gateway receives a Q.931 Alerting message. In condition that FXS Gateway is the originate side.

LABEL	DESCRIPTION
Busy Tone	Setting the played tone type, when destination is busy.
Dial Tone	Setting the played tone type, when hook off a phone set of workable FXS Gateway.
2nd Dial Tone	To configure the value of the local 2nd dial tone.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

For tone simulation, FXS Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

- ringing frequency: 15 ~ 100 (Unit: Hz)
- ringing ring ON/OFF: 0 ~ 8000 (Unit: ms)
- ringing level: 0 ~ 94 (Unit: V)
- tone frequency: 0 ~ 65535 (Unit: Hz)
- tone freqLevel: 0 ~ 65535 (Unit: mVrms)
- tone Tone ON/OFF: 0 ~ 8000 (Unit: ms)

Chapter 12
Support Configuration Screen

This Chapter provides some extra functions that might be needed by users.

12.1 Support Configuration Overview

The web configuration provides Support Configuration screen.

12.2 Support Configuration Screen

Click [Support configuration] in the navigation panel and open the [Support Configuration] Screen.

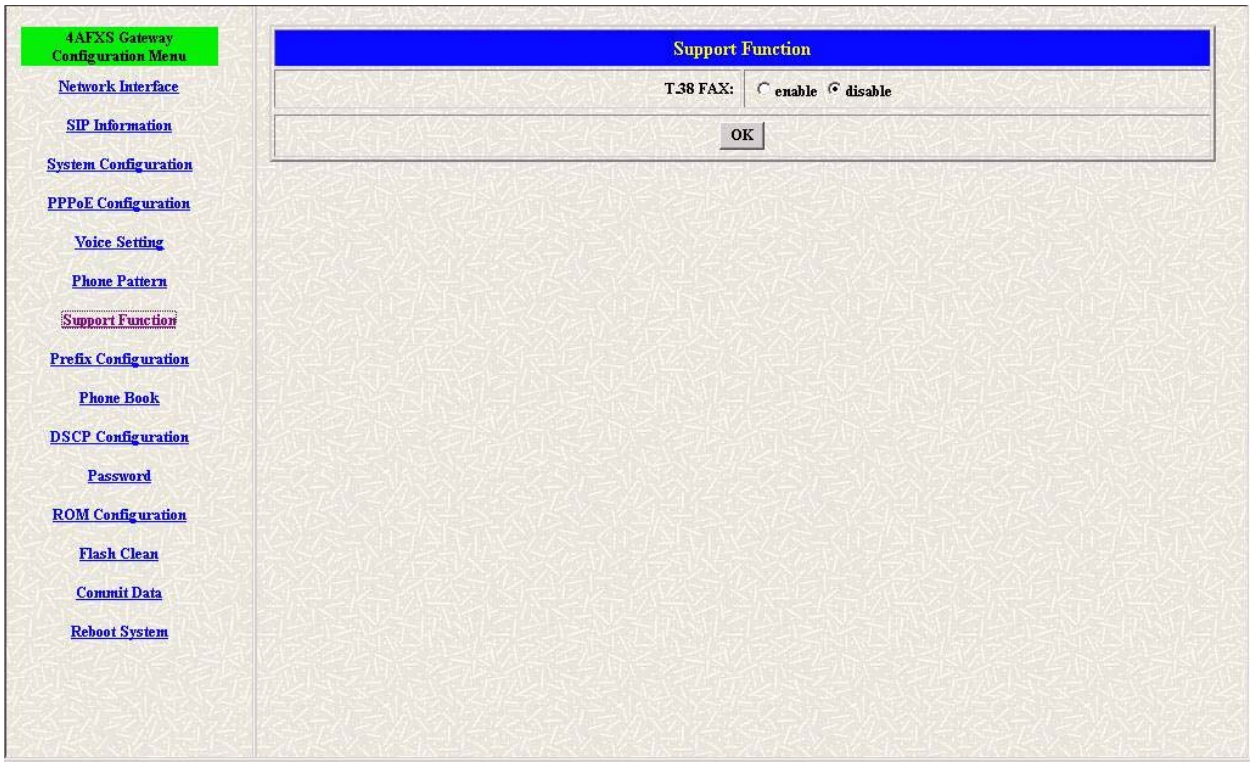


Figure 12-1 Support Configuration

The following table describes this screen.

Table 12-1 Support Configuration

LABEL	DESCRIPTION
T.38 FAX	Select enable/disable for T.38 FAX function. When T.38 ability is on, FXS Gateway will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 13
Prefix Configuration Screen

This Chapter provides some extra functions that might be needed by users.

13.1 Prefix Configuration Overview

The web configuration provides Prefix Configuration screen.

13.2 Prefix Configuration Screen

Click [Prefix configuration] in the navigation panel and open the [Prefix Drop/Insert Configuration] Screen.

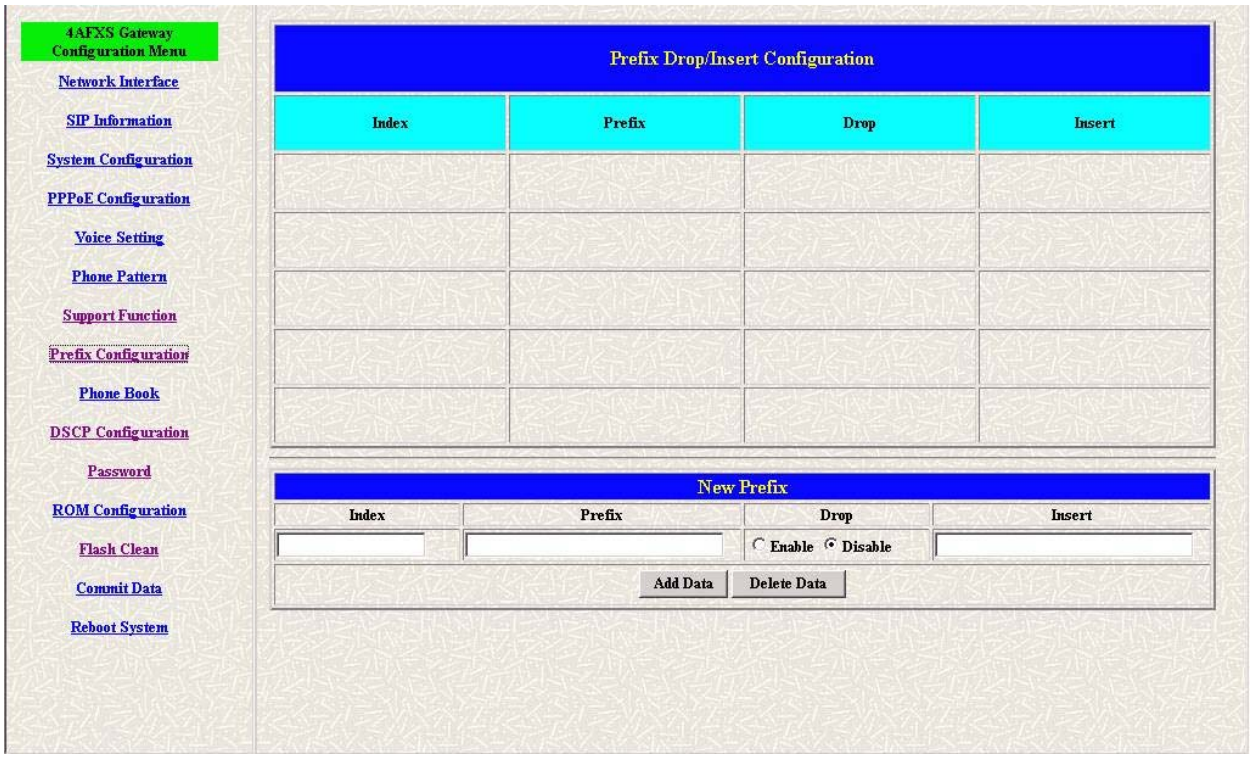


Figure 13-1 Prefix Configuration

The following table describes this screen.

Table 13-1 Prefix Configuration

LABEL	DESCRIPTION
Index	Setting the index number for prefix record (max 30 record).
Prefix	Setting the prefix number of the whole numbers that could be into this VoIP gateway (1~20 digits).
Drop	Select enable or disable drop prefix function. The function is enabled means to drop prefix number when dialing out. The function is disabled means to keep prefix number.
Insert	Setting the digits that you want to insert in this number

LABEL	DESCRIPTION
	(1~30 digits)
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 14
Phone Book Configuration Screen

This Chapter covers Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

14.1 Phone Book Configuration Overview

The web configuration allows you to Set up Phone Book that tell the FXS Gateway how to call management traffic when you configuration P2P mode.

14.2 Phone Book Configuration Screen

Click [Phone Book Configuration] in the navigation panel and open the [Phone Book] Screen.

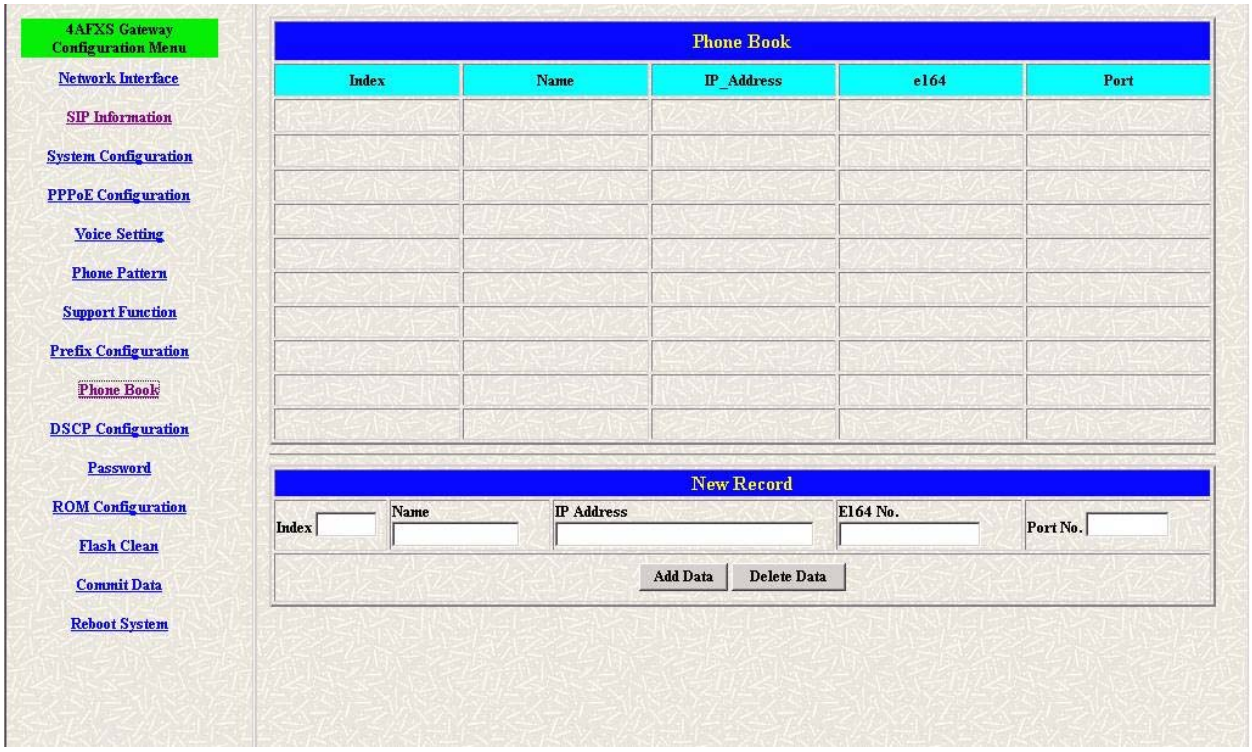


Figure 14-1 Phone Book

The following table describes this screen.

Table 14-1 Phone Book

LABEL	DESCRIPTION
Index	The field displays the index number.
Name	The field displays the descriptive name.
IP Address	The field displays the IP Address or Domain name.
E164	The field displays the descriptive E164 number.

LABEL	DESCRIPTION
Port No.	The field displays the Call signal port number of caller
New Record	
Index	Set up an Index number from 1 to 100, to the parameter to show specific phone number.
Name	Set up a descriptive name (max 20 byte).
IP Address	Set up IP Address or Domain Name.
E164	Set up e164 (telephone) number (max 20 digits)
Port No.	Call signal port number of caller
Add Data [button]	Click [Add Data] button to insert the information table.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination's IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

Chapter 15
DSCP Configuration Screen

IP Packet ToS(type of Service)/Differentiated Service configuration.

15.1 DSCP Configuration

The web configurator provides DSCP Configuration screen.

15.2 DSCP Configuration Screen

Click **DSCP Configuration** in the navigation panel and open the **DSCP Configuration** Screen.

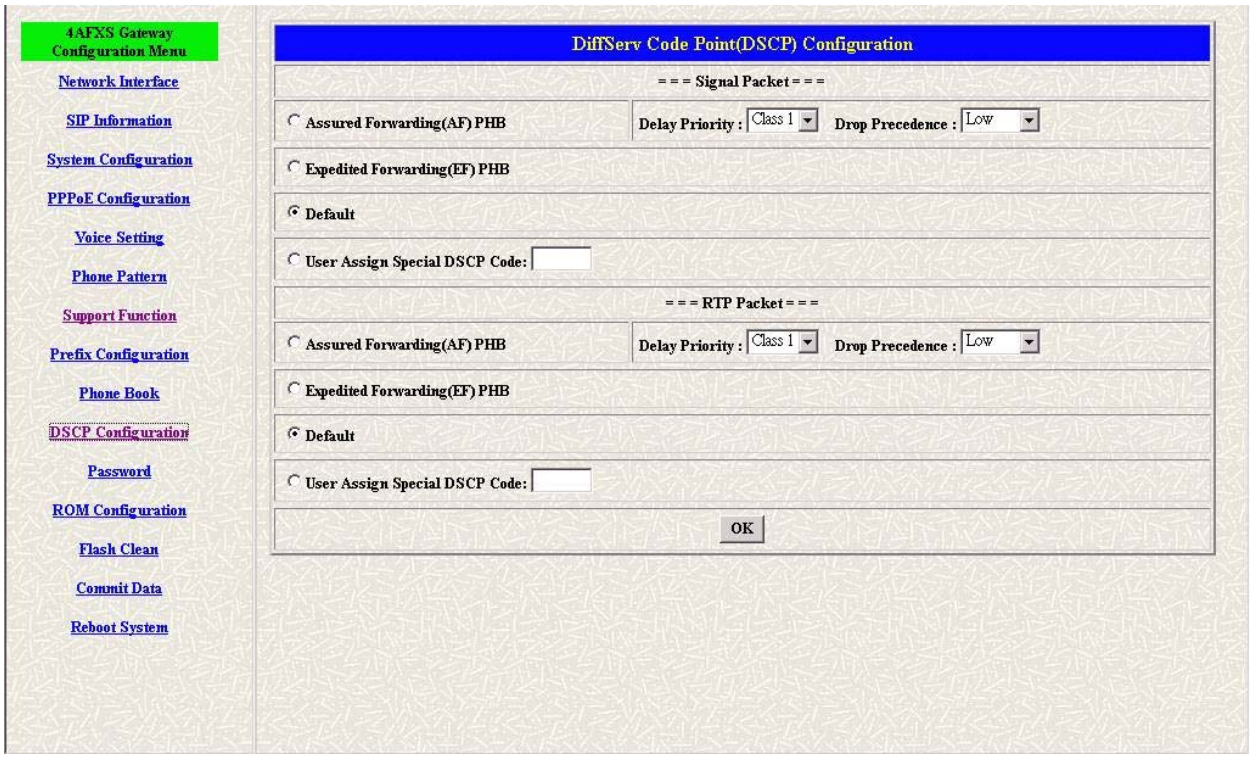


Figure 15-1 DSCP Configuration

The following table describes this screen.

Table 15-1 DSCP Configuration

LABEL	DESCRIPTION
Assured Forwarding (AF) PHB	Select Delay priority and Drop Precedence.
Expedited Forwarding (EF) PHB	Select TOS value as EF.
Default	Select TOS value as 0.
User Assign Special	User can set other unspecified value here.

LABEL	DESCRIPTION
DSCP Code	
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 16
Password Configuration Screen

This Chapter explains how to change the FXS Gateway password.

16.1 Password Configuration Overview

The Password screen allows you to configure the administrator password.

16.2 Password Configuration Screen

Click [Password configuration] in the navigation panel to open the [Password Configuration] screen.

Using the [Password Configuration] to set root and administrator password for the FXS Gateway.

It is highly recommanded that you change the default password ([Null]].

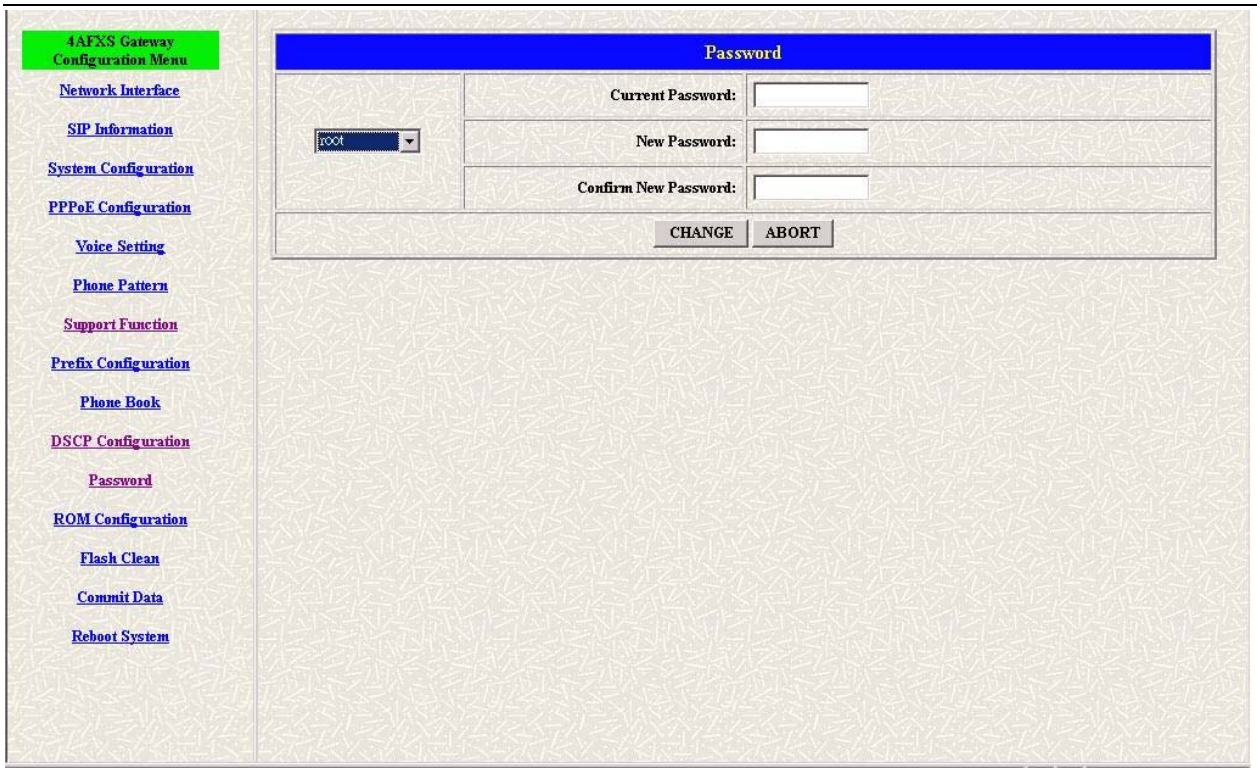


Figure 16-1 Password Configuration

The following table describes this screen.

Table 16-1 Password Configuration

LABEL	DESCRIPTION
Username	Select root or administrator different options from the drop-down list box.
Current Password	Type the existing system password ([Null] is the default password when shipped).
New Password	Type your new system password.

LABEL	DESCRIPTION
Confirm New Password	Confirm your new system password for confirmation.
CHANGE [button]	Click [CHANGE] to save your change back to the FXS Gateway volatile memory.
ABORT [button]	Click [ABORT] to clean type data this page afresh.

Chapter 17
ROM Upgrade Screen

This Chapter explains how to Update FXS Gateway Version.

17.1 ROM Configuration Overview

The web configuration provides Update FXS Gateway ROM Version.

17.2 ROM Configuration Screen

Click [ROM Upgrade] in the navigation panel and open the [ROM Configuration] Screen.

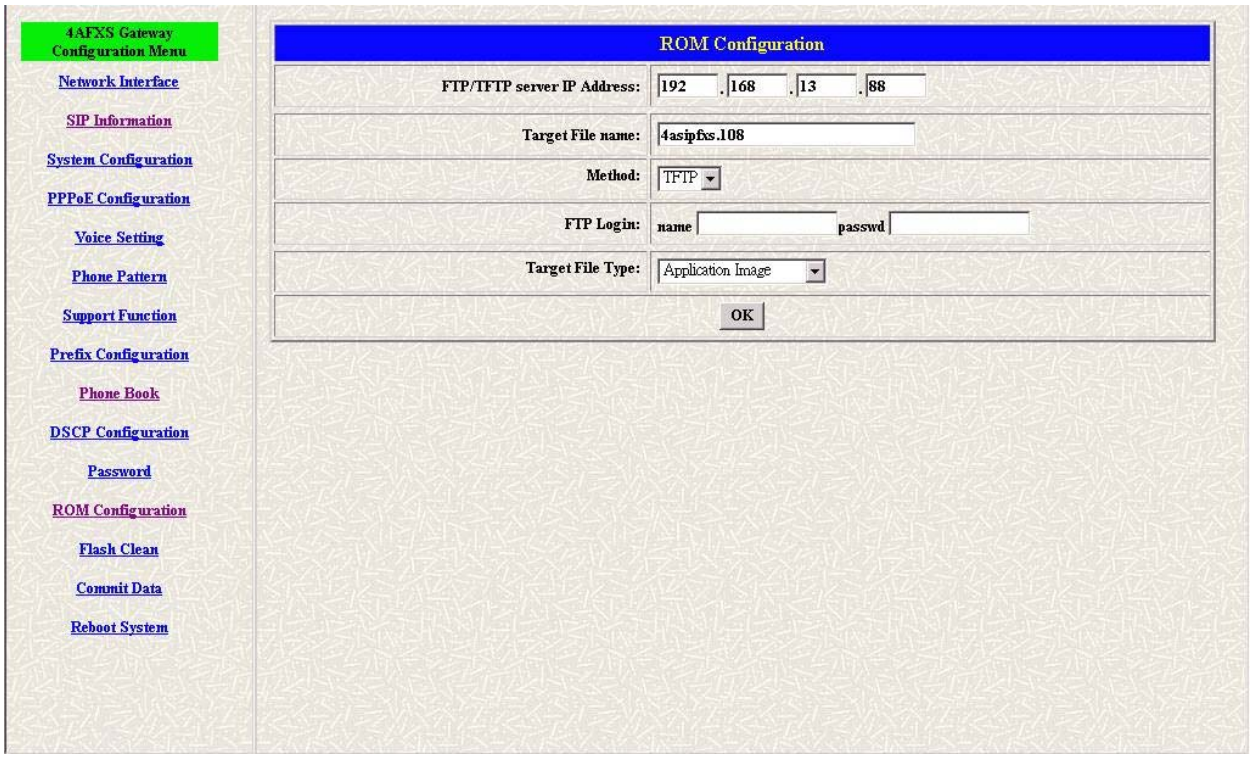


Figure 17-1 ROM Configuration

The following table describes this screen.

Table 17-1 ROM Configuration

LABEL	DESCRIPTION
Server IP Address	Enter the FTP or TFTP Server IP Address.
Target File Name	Enter the file name prepared to upgrade.
Method	Select download method as FTP or TFTP.
FTP Login Name	Enter the FTP Login name (max 14 byte)
FTP Login Password	Enter the FTP Login password (max 14 byte)
Target File Type	Select download Target File Type on 2M Boot Image, DSP Application Image, DSP Core Image, DSP Test Image different

LABEL	DESCRIPTION
	options from the drop-down list box.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

Most of all, the Rom file needed to get upgrade is App or Boot2m. Please check the exactly Rom file before doing download procedure.

Chapter 18
Flash Clean Screen

This Chapter covers save change and clean the entire user defined value in factory default mode.

18.1 Flash Clean Overview

The web configuration provides Flash Clean screen.

18.2 Flash Clean Screen

Click [Flash Clean] in the navigation panel and open the [Flash Clean] Screen.

Figure 18-1 Flash Clean

The following table describes this screen.

Table 18-1 Flash Clean

LABEL	DESCRIPTION
Clean [button]	Clean all configuring FXS Gateway stored.

Note:

User whose login name is root only executes it. All configurations in [Network Interface] will be kept.

Chapter 19
Commit Data Screen

This Chapter covers save change after configuring FXS Gateway.

19.1 Commit Configuration Data Overview

The web configuration provides Commit Configuration Data screen.

19.2 Commit Configuration Data Screen

Click [Commit Data] in the navigation panel and open the [Commit Configuration Data] Screen.

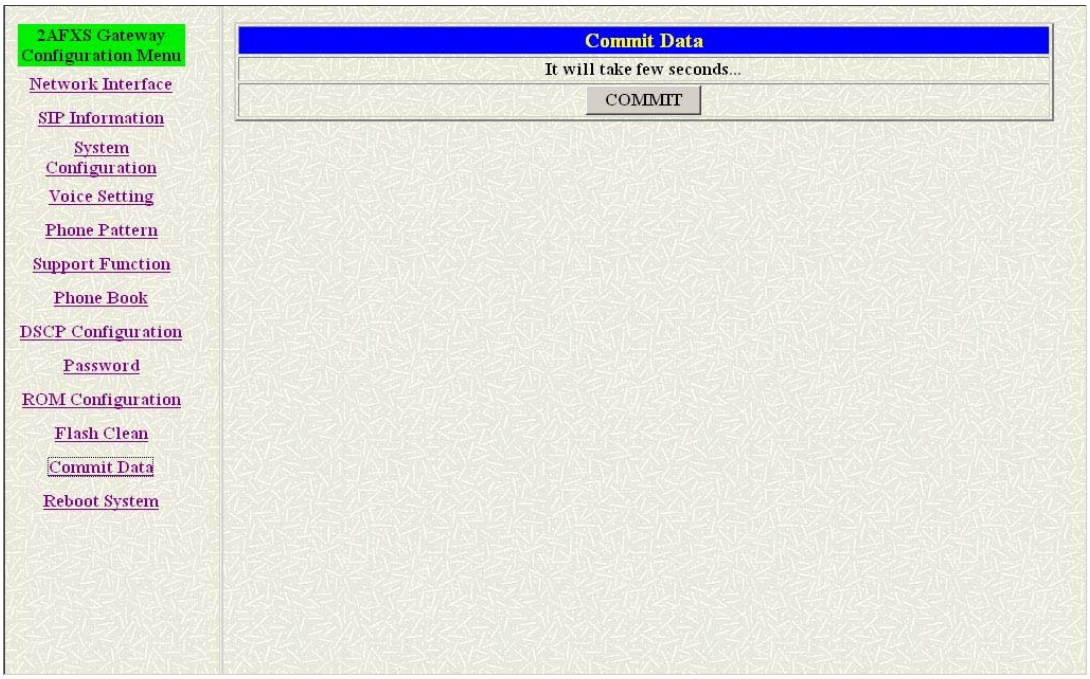


Figure 19-1 Commit Data

The following table describes this screen.

Table 19-1 Commit Configuration Data

LABEL	DESCRIPTION
Commit [button]	Save changes after configuring FXS Gateway.

Chapter 20
Reboot System Screen and line status

This Chapter covers reboot to reload FXS Gateway in new configuration.

20.1 Reboot FXS Gateway Overview

The web configuration provides Reboot FXS Gateway screen.

20.2 Reboot FXS System screen

Click [Reboot System] in the navigation panel and open the [Reboot FXS Gateway] Screen.

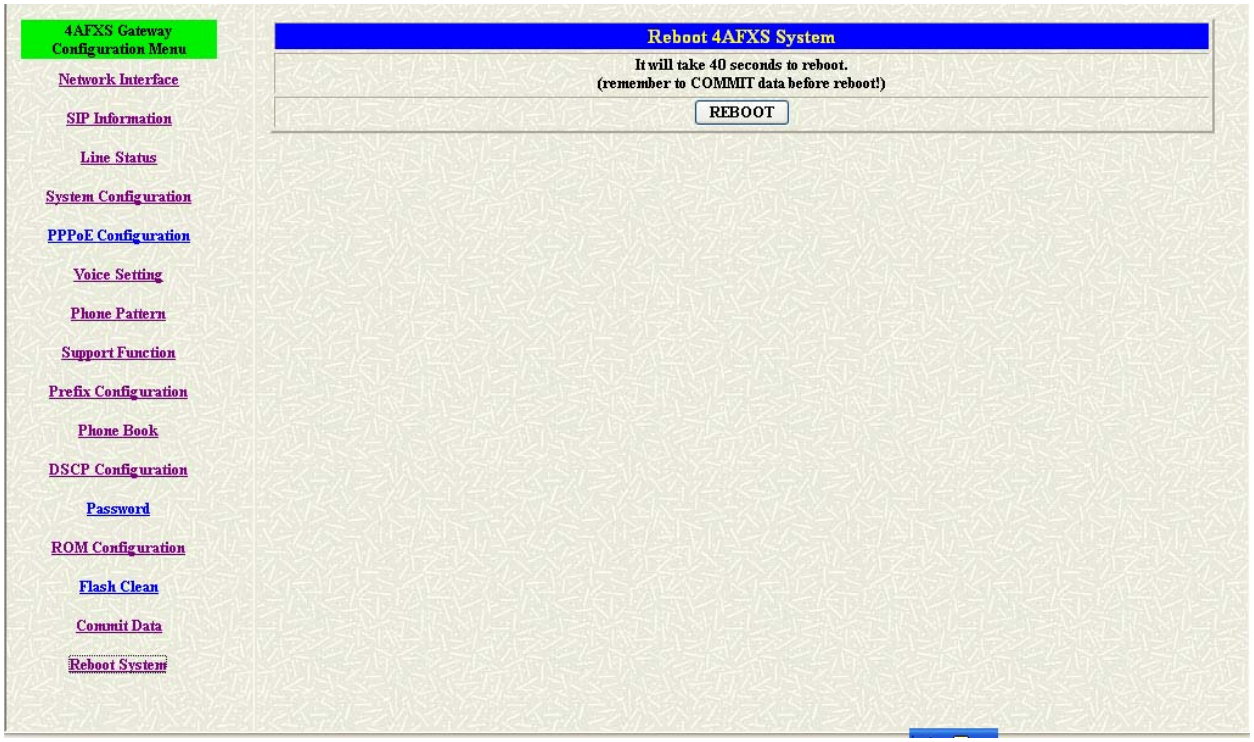


Figure 20-1 Reboot FXS System

The following table describes this screen.

Table 20-1 Reboot FXS System

LABEL	DESCRIPTION
Reboot [button]	After commit command, type reboot to reload FXS Gateway in new configuration. The procedure is as below:

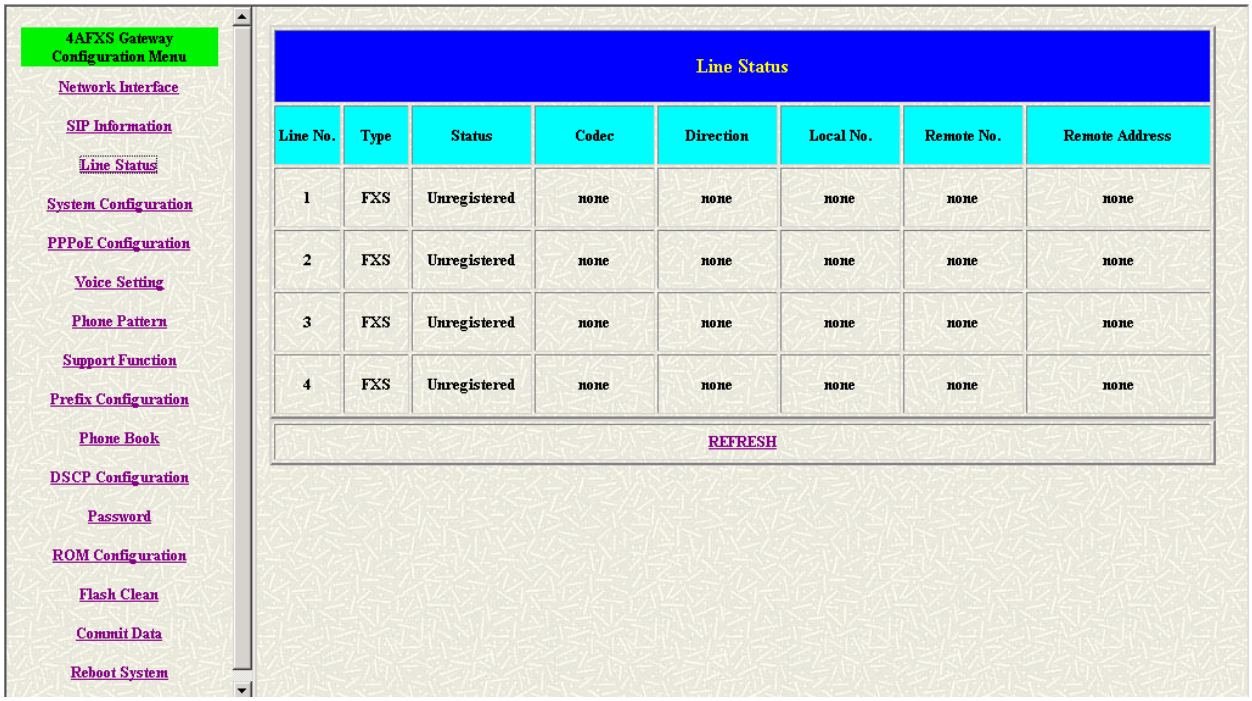


Figure 20-2 line status

The following table describes this screen.

Table 20-2 line status

LABEL	DESCRIPTION
line[button]	This function only display every line status

Part III:

Command with FXS Gateway

This part gives information on commands to use.

Chapter 21
Command List

This section introduces the command line interface and lists all of the command s.

21.1 Hyper Terminal Setting

A terminal emulator is needed when using RS-232 port to configure Gateway. There are kinds of terminal emulator software. Here, we use Microsoft HyperTerminal to depict how to set up terminal emulator:

Step 1. Execute the Hyper Terminal program, and then the following windows will pop-up on the screen (START→Program files→Accessories→ Communication →Hyper Terminal).

Figure 21-1 Connection Description

Step 2. Define a name such as [3502] for this new connection, after pressing [OK] button.

Figure 21-2 Connection Description

Step 3. The next windows appear, and then choose COM1/2 Port, which you are going to use.

Figure 21-3 Connect To

Step 4. Configure the COM Port Properties as following: Bits per second: 9600, Flow control: None, Press [OK] button, and then start to configure Gateway.

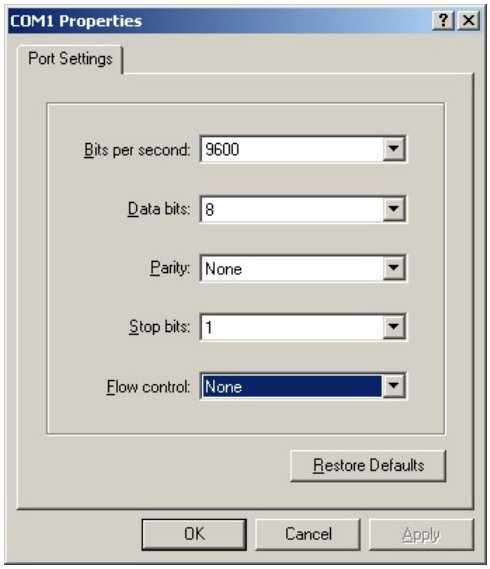


Figure 21-4 Com Properties

21.2 Power On Your Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The [Status LED] will come on after the system tests are complete. The WAN LED and one of the LAN LED come on immediately after the [Status LED] come on, if connections have been made to the LAN and WAN ports.

➢ Initial Screen

When you power on your Gateway it performs server internal tests as well as line initialization.

After the tests, the Gateway asks you to enter the Login, as shown.

```
Attached TCP/IP interface to cpm unit 0
```

```
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 21-5 Initial Screen

- **Entering Login**

For you first login, enter the login [root] and default password [Null]. As you type the password, the screen displays and (*) for each character you type.

```
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login: root
Welcome to Terminal Configuration Mode
Please enter your configuration item

usr/config$
```

Figure 21-6 Login Screen

Note:

Login account [root] or [administrator] is the default login account and there is no password needed.

➢ **Set Password**

To set your own password in root login name, just input command [passwd –set root ****]. For example, if password of root account is prepared as [voip], configuration it. When set password ok, you can see ok message.

```
usr/config$ passwd -set root voip

Setting
Login: root
Password: voip
OK

usr/config$
```

Figure 21-7 Change password Screen

21.3 Command Structure with Gateway

21.3.1 Setup IP Address

Use command [ifaddr] to configure Gateway IP Address and related information.

For example:

Step 1. Setting IP address

```
usr/config$ ifaddr –ip 192.168.1.11 –mask 255.2555.255.0 –gate 192.168.1.254
```

Description:

This is to configure Gateway IP Address as [192.168.1.11], subnet mask as [255.255.255.0], default router gateway as [192.168.1.254].

Step 2. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Note:

After configured the IP Address and input the [commit], then [reboot] process, user can start to do other configurations via HTTPD.

21.3.2 Application Mode Configuration

It is including Basic mode, such as Gatekeeper and Peer-to-Peer, and Advanced mode, such as Hotline mode and IP-Sharing mode. It will be detailed in the next Chapter.

21.3.3 Saving Your Configuration

Save the change of configurations for Gateway and apply the new configurations by rebooting the device.

Step 1. Confirm the changed configurations, input [commit] and press [enter] key to save it.

Step 2. Input [reboot] then press [enter] key to restart Gateway.

Step 3. After around 40 seconds, Gateway will take effect in new configurations.

These commands save all system configuration into nonvolatile memory. Nonvolatile memory refers to the Gateway storage that remains even if the Gateway power is turned of. Run Time (memory) is lost when the Gateway power is turned off. You must use the command to save any configuration that you make, otherwise the Gateway will return to its default setting when it is restarted.

Do not turn off your Gateway or remove the Gateway while saving your configuration.

21.4 Application modes

This Chapter will introduce the four application modes users often use. Particularly the Proxy/Gateway and Peer-to-Peer mode are the basic application mode. User would like to set as advanced application mode, such as PPPoE Mode and Behind IP-Sharing mode, please refer to the basic application mode for more information.

21.4.1 Proxy mode

Proxy mode means that there will be an intermediate Proxy Server between FXS Gateway and the remote entity. While operating at this mode, FXS Gateway will first register to the Proxy Server located at the ISP side. For the following operation, it sends the INVITE message to the Proxy Server once you initiate a session. Then the Proxy server will forward the INVITE message to the right place. And the Response message from the remote entity will be forwarded back to you via Proxy server.

Step 1. If you have one or more accounts included user name and password, you need to configure the accounts using “security” command. For detail, please refer to Chapter 19.7.13 [security] command.

An example is demonstrated below:

```
usr/config$ security –line 1 –name 12345 –password 12345
```

Note:

This is to set username (userid) as “12345”, password as “12345” into line1, which means line1 can accept incoming calls after successfully registered to Proxy server. If you have another account and set into line2 as shown below.

```
usr/config$ security –line 2 –name 54321 –password 54321
```

Note:

This is to set username (user id) as “54321”, password as “54321” into line2. Then, both lines can accept incoming calls after registration.

Step 2. You must specify Proxy address obtained from your service provider. And the Proxy address can be IPv4 address as well as DNS name. For detail, please refer to Chapter 19.7.12 [sip] command.

Several important SIP parameters are listed below when setting proxy mode:“–px”, ”–line1” and ”–line2”.

An example is demonstrated below:

```
usr/config$ sip –px 210.68.222.33 -line1 0506 –line2 0507
```

Note:

1. This is to set proxy address as “210.68.222.23”, line1 number as “0506”, line2 number as “0507”
2. The line number of line1 and line2 depends on what you get from your service provider.

Step 3. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 4. Wait for FXS Gateway initializing in Proxy mode. It should take around 40 seconds. And you will see the below information displayed on Hyper-Terminal if the registration is successful.

```
usr/config$
. Rebooting...It will take 40 seconds....Attached TCP/IP interface to cpm
unit 0
Attaching interface lo0...done
 WorkMode : PROXY_MODE
 Start registering to Proxy server

HTTPD initialized...

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
```

```
VP v1.42 stack open sucessfully.

login:
```

21.4.2 Gateway mode

Gateway mode means that all channels use only one account to register proxy server, but proxy must provide this function.

Step 1. If you have one accounts included user name and password, you need to configure the accounts using “security” command.

An example is demonstrated below:

```
usr/config$ security –line 1 –name 12345 –password 12345
```

Note:

This is to set username (userid) as “12345”, password as “12345” into line1, which means line1 can accept incoming calls after successfully registered to Proxy server.

Step 2. You must specify Proxy address obtained from your service provider. And the Proxy address can be IPv4 address as well as DNS name.

Several important SIP parameters are listed below when setting proxy mode:“–px”, ”–line1” and ”–line2”.

An example is demonstrated below:

```
usr/config$ sip –mode 2
usr/config$ sip –px 210.68.222.33 -line1 0506 –line2 0507
```

Note:

1. This is to set proxy address as “210.68.222.23”, line1 number as “0506”, line2 number as “0507”
2. The line number of line1 and line2 depends on what you get from your service provider.

Step 3. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 4. Wait for FXS Gateway initializing in Proxy mode. It should take around 40 seconds. And you will see the below information displayed on Hyper-Terminal if the registration is successful.

```
usr/config$
. Rebooting...It will take 40 seconds....Attached TCP/IP interface to cpm
unit 0
Attaching interface lo0...done
 WorkMode : PROXY_MODE
```

```
 Start registering to Proxy server

HTTPD initialized...

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

21.4.3 Peer-to-Peer Mode

Peer-to-Peer Mode allows users to call other VoIP devices without the proxy server. When in Peer-To-Peer mode, FXS Gateway use Phone Book, which will dial predefined phone number, and press "#" (optional, to accelerate the dial) as end of dial.

To configure Peer-To-Peer Mode in FXS Gateway, follow the steps below:

To configure Peer-To-Peer Mode in Gateway, follow the steps below:

Step 1. Set Peer-To-Peer Mode, using "sip" command

```
usr/config$ sip –mode 0
```

Note:

mode 0 is for Peer-To-Peer mode, while mode 1 is for Proxy mode.

Step 2. Configure Phone Book, using "pbook" command.

Users can refer to chapter 19.7.9 [pbook] command for more information.

```
usr/config$ pbook –add name TEST1 ip 10.1.1.1 e164 10
```

Note:

The command is to add a record onto PhoneBook. After the command completed, you can type "pbook –print" to see if the input record is correct.

When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately. For phonebook configuration, please refer to Chapter 19.7.9.

21.4.4 Hotline Mode

The Hotline Mode is applied in limited two peers. User just picks up the phone set and then hears ring back tone or dial tone depended on configurations of destination device.

Step 1. Specify gateway service type as Hotline service.

Step 3. Create a Hotline table with [line] command.

```
usr/config$ sysconf –service 1
usr/config$ bureau –hotline 1 10.2.2.2 201
```

This example means that if user picks up phone set of FXS Line1, gateway will automatically dial out IP address of [201].

Note:

If this gateway is under P2P mode, please set the phone book firstly.

The IP address of “bureau” command indicates the IP address of called party in P2P mode, or the proxy IP address in proxy mode.

Step 4. After the configuration, [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

21.4.5 Behind IP-Sharing Mode

One Sets FXS Gateway

The function is for user whose network environment is behind IP Sharing device. It is said Gateway is connected to the IP Sharing device.

An example such as ADSL network is in the following.

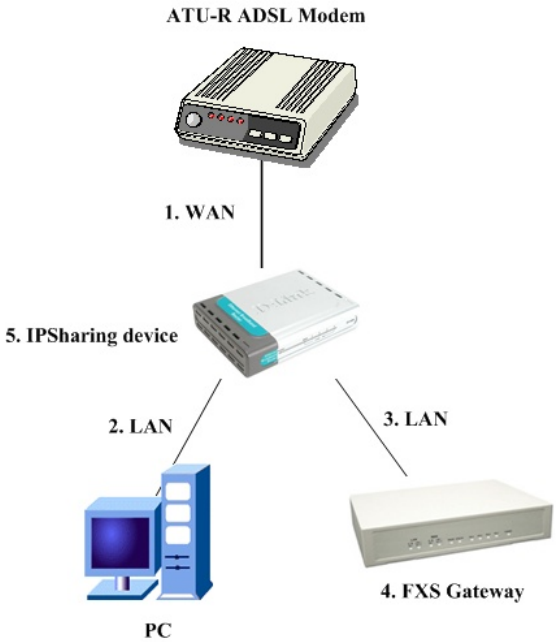


Figure 21-8 One Sets FXS Gateway

Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User’s PC can be set as DHCP client in order to gain a valid one.

Step 3. One can also assign a fixed IP address, which belongs to the same network segment as the LAN interface of IP Sharing device.

Step 4. FXS Gateway must enable the IP Sharing function for the fixed / dynamic WAN IP Address.

Fixed IP Address:

```
usr/config$ ifaddr –ipsharing 1 210.11.22.33
```

Dynamic IP Address:

```
usr/config$ ifaddr –ipsharing 1
```

Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

Step 5. After the configuration, [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 6. IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP message to 192.168.1.5.

Please see following for example:

>Advanced setting > NAT setting > DMZ Host setting

DMZ Host setting

☐ **Activate DMZ**

DMZ Host IP: 192.168.1.5

Two Sets FXS Gateway

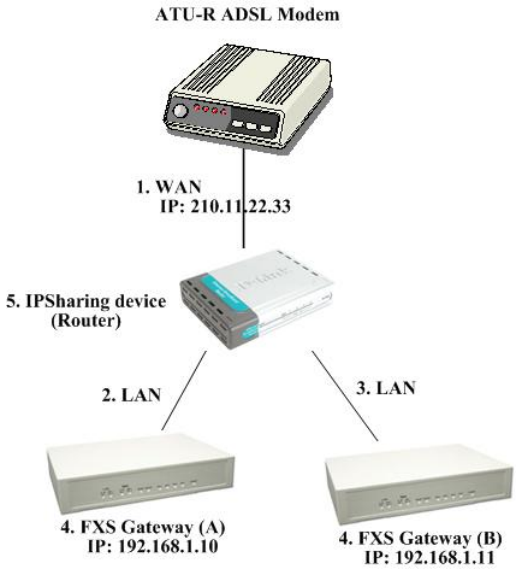


Figure 21-9 Two Sets FXS Gateway

Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.
Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

Step 3. Assign an IP address to each set using DHCP or fixed address.

Step 4. Enable the IP Sharing function for each set using following command.

```
Fixed IP Address
usr/config$ ifaddr –ipsharing 1 210.11.22.33
```

Step 5. Configure separate SIP port and RTP port for each set to prevent from port conflict. For example, if set A uses the default settings (SIP port: 5060, RTP port: 16384), you must change set B's setting to SIP port equal to 5061 and RTP port equal to 26384 for instance.

```
Change SIP port – usr/config$sip –port 5061
Change RTP port– usr/config$sip –rtp 26384
```

Step 6. Use the Port Forwarding or Port Redirection function provided by IP Sharing device (Router). See following for example.

>Advanced setting > NAT setting > Port Redirection

Active Configuration

Items	Service name	Protocol	Actual Port	Virtual IP	Virtual Port	Enable

1	1	UDP	5060	192.168.1.10	5060	V
2	2	UDP	16384	192.168.1.10	16384	V
3	3	UDP	16394	192.168.1.10	16394	V
4	4	UDP	5061	192.168.1.11	5061	V
5	5	UDP	26384	192.168.1.11	26384	V
6	6	UDP	26394	192.168.1.11	26394	V
7		---	0		0	X
8		---	0		0	X
9		---	0		0	X
10		---	0		0	X

Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

1. Different Vendor's Router will have different appearance of setting.
2. Once you set the DMZ Host, you don't need to configure the Port Forwarding and vice versa.
3. If there is only one FXS Gateway attached to the IP Sharing device, it is recommanded to use DMZ Host setting to enable the NAT traverse and disable the Port Forwarding.
4. If there are two or more sets of FXS Gateway attached to the IP-Sharing device, please configure the Port Redirection (Forwarding) to enable the NAT traverse and disable the DMZ Host.
5. After the IP Sharing configuration of FXS Gateway and IP Sharing device is complete, you must reboot the FXS Gateway to activate the new settings.

21.4.6 PPPoE Mode

Figure 21-10 PPPoE Mode

Step 1. Set PPPoE mode, using [pppoe]

```
usr/config$ pppoe –dve 1 (PPPoE used)
usr/config$ pppoe –open (PPPoE open)
```

Step 2. Input the user id & password provided by your ISP, using [pppoe]

```
usr/config$ pppoe –id 123@hinet.net (PPPoE login account)
usr/config$ pppoe –pwd 123 (PPPoE login Passowd)
```

Step 3. Reboot the device once after disconnection, using [pppoe]

```
usr/config$ pppoe –reboot 1 (Enable)
```

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
      Device          : Enabled
      Status          : Not initialized
      User name       : 84460791@hinet.net
      Password        : ********
      Reboot          : Yes

usr/config$
```

Step 4. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 5. When Gateway connection success.

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
      Device          : Enabled
      Status          : Ready
      User name       : 84460791@hinet.net
      Password        : ********
      Reboot          : Yes
      IP address      : 218.160.239.35
      Destination     : 61.223.128.254
      DNS primary     : 168.95.1.1
```

```
Subnet Mask       : 255.255.255.255
Authenticate      : PAP
Protocol          : TCP/IP
Device            : PPP/PPPoE

usr/config$
```

21.4.7 Call Hold, Transfer and Forward Mode

Gateway provides call features including call hold, transfer and forward. Please be noted that both calling and called site have to support this feature. For call forward function, it only works under Proxy mode. Of course, Proxy must support these call features, too.

- It is better for user to prepare a telephone set supported [FLASH] function on keypad. If telephone set does not support [FLASH] function on keypad, user can click the Hook quickly by sending FLASH message.

Call Hold – press [FLASH]

By pressing the FLASH after making a call, both sites will hear the 2nd dial tone generated by Gateway. To retrieve the call back, just press the FLASH again.

- **Call Transfer – press [FLASH], then [transferring number]**

For example, A call B, B transfer to C

A make a call to B, B press FLASH. A and B hear 2nd dial tone. B presses the C's number. C ringing and B hear the Ring Back tone. B can hang up this call only when C answers the call. When B hang up the handset, A and C Make the call.

- **Call Forward:**
  - Busy Forward: *77 [Forward No.] #; Cancel Busy Forward: #77#
  - No response/ Answer: *76 [Forward No.] #; Cancel No response/ Answer Forward: #76#
  - Unconditional: *75 [Forward No.] #; Cancel Unconditional Forward: #75#

Step 1. Busy Forward: while line is engaged or phone set is off-hook.

Step 2. No response/Answer: while no one answers the call.

Step 3. Unconditional: forward it unconditionally.

21.5 How to upgrade

- **Before you start downloading**

Step 1. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.

Step 2. Remember the current configuration, such as [sip], [security], [pbook], and

you change configuration data.

Step 3. It will list current version and default download method. Please check the **Application Rom** in particular, it is showed version list, as well as the most common one you have to upgrade.

Step 4. General speaking, App Rom is named including product name and version and size is under 1MB, such as **4asipfxs.106.** 2MB Rom is named such as **2m4asipfxs.106**. Please be very careful of the prepared Rom file while upgrading.

Step 5. Check Application Rom Version, input [rom –print] command

For example:

```
usr/config$ rom –print

    Download Method   :   TFTP
          Boot Rom    :   sdboot.200
    Application Rom   :   4asipfxs.106
           DSP App    :   48302ce3.140
       DSP Kernel     :   48302ck.140
     DSP Test Code    :   483cbit.bin

      Hold Tone       :   holdtone.101
usr/config$
```

Step 6. Prepare FTP or TFTP server ready.

➢ **Upgrade steps: FTP Mode (Application Rom)**

Step 1. Choose Download Method: FTP method

1. [-method]: Choose download method: FTP method,
2. input the FTP Login name and password
3. [rom -print]: check configuration data

```
usr/config$ rom –method 1
usr/config$ rom –ftp id password
usr/config$ rom –print
```

For example:

```
usr/config$ rom –print

    Download Method   :   FTP
```

```
    FTP username    :    test
    FTP password    :    test

              Boot Rom    :    sdboot.200
     Application Rom    :    4asipfxs.106.bin
                DSP App    :    48302ce3.140
           DSP Kernel    :    48302ck.140
        DSP Test Code    :    483cbit.bin

        Hold Tone    :    holdtone.101
usr/config$
```

Step 2. Application Rom upgrade

1. [-app]: Choose means the prepared upgrade Rom.
2. [-s]: input the FTP Server IP Address.
3. [-f]: input the Rom files name

```
usr/config$ rom –app –s 192.168.1.1 –f 4asipfxs.106a
```

Step 3. flash –clean

Command [flash -clean] to clear old configurations. It will keep all configurations in [ifaddr].

```
usr/config$ flash –clean
```

➢ **Upgrade steps: TFTP Mode (Boot2m)**

Step 1. Choose Downlaod Method: TFTP method (default)

1. [-method]: Choose download method: TFTP method,
2. [rom -print]: check configuration data

```
usr/config$ rom –method 0
usr/config$ rom –print
```

For example:

```
usr/config$ rom –print
      Download Method    :    TFTP
              Boot Rom    :    sdboot.200
      Application Rom    :    4asipfxs.106
                DSP App    :    48302ce3.140
           DSP Kernel    :    48302ck.140
        DSP Test Code    :    483cbit.bin
```

```
        Hold Tone   :   holdtone.101
usr/config$
```

Step 2. Boot2m upgrade

1. [-boot2m]: Choose means the prepared upgrade Rom.
2. [-s]: input the FTP Server IP Address.
3. [f]: input the Rom files name

```
usr/config$ rom –boot2m –s 192.168.1.1 –f 2m4asipfxs.106a
```

Step 3. Find out MAC Address:

There are 12 digits on label on the back panel of the device, or command as [ifaddr -ifshow] (find the list information of Ethernet address, it is MAC Address).

```
usr/config$ ifaddr –ifshow
```

For example:

```
usr/config$ ifaddr -ifshow

cpm (unit number 0):
        Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
        Type: ETHERNET_CSMACD
        Internet address: 192.168.13.80
        Broadcast address: 192.168.15.255
        Netmask 0xfffff800 Subnetmask 0xfffff800
        Ethernet address is 00:01:a8:00:27:43
        Metric is 0
        Maximum Transfer Unit size is 1500
        0 octets received
        0 octets sent
        221 packets received
        0 packets sent
        221 unicast packets received
        0 unicast packets sent
        0 non-unicast packets received
        0 non-unicast packets sent
        0 input discards
        0 input unknown protocols
        0 input errors
        138 output errors
        0 collisions; 0 dropped
```

Step 4. Set MAC Address:

```
usr/config$ setmac
- enter mac address (xxxxxxxxxxxx):
```

For example:

```
usr/config$ setmac
- enter mac address (xxxxxxxxxxxx):0001a8002743
- the mac address is 00 01 a8 00 27 43
- if mac address is correct,please press 'y' to
   setup configuration,else press 'n' to continue
y
- mac address configuraton OK.
usr/config$
```

Step 5. Set IP Address:

```
usr/config$ ifaddr –ip xxx.xxx.xxx.xxx –mask xxx.xxx.xxx.xxx –gate
xxx.xxx.xxx.xxx
```

Step 6. commit, reboot

```
usr/config$ commit
usr/config$ reboot
```

21.6 Commands with FXS Gateway

The following table lists all of the commands that you can use with the Gateway. Refer to the following chapters for descriptions of commonly used commands.

This user's guide describes commands that are helpful for configuring the Gateway. Using commands not documented in the user's guide can damage the unit and possibly render it unusable.

Table 21-1 Commands with FXS Gateway

Command	DESCRIPTION
help	help/man/?[command]
quit	quit/exit/close.
debug	Show debug message.
reboot	Reboot local machine.
flash	Clean configuration from flash rom.
commit	Commit flash rom data.
ifaddr	Internet address manipulation.
time	Show current time.
ping	Test that a remote host is reachable.

Command	DESCRIPTION
pbook	Phonebook information and configuration.
pppoe	PPPoE stack manipulation.
sysconf	System information manipulation.
Pro	Pro information manipulation.
sip	This command is to configure SIP related parameters.
security	This command is used to configure the account information included username and password obtained from the service provider.
voice	Voice information manipulation.
support	Special Voice function support manipulation.
tos	TOS service allows users to achieve QoS on IP network.
phone	Setup of call progress tones and ringing (SLIC control).
bureau	To set Hotline function must be under Peer-to-Peer mode and switch to hotline mode.
rom	ROM file update.
auth	Set configuration items for "administrator" user.
passwd	Password setting information and configuration.
line	Line information manipulation
prefix	Prefix drop/insert information manipulation

21.7 System Commands Overview

21.7.1 [quit]

Type [quit] will quit the Gateway configuration mode. And turn back to login prompt.

```
usr/config$ quit

Disconnecting..
login: root
Welcome to Terminal Configuration Mode
Please enter your configuration item

usr/config$
```

Figure 21-11 quit command

Note:

It is recommanded that type the [quit] command before you leave the console. If

so, Gateway will ask password again when next user connects to console port.

21.7.2 [debug]

Open debug message will show up specific information while Gateway is in operation. After executing the debug command, it should execute command [debug –open] as well.

```
usr/config$ debug

Debug message information and configuration
Usage:
debug [-add type1 [[type2]...]] | -open | -close | -status

    -status     Display the enabled debug flags.
    -add        Add debug flag.
    -delete     Remove specified debug flag.
    -open       Start to show debug messages.
    -close      Stop showing debug messages.
Example:
    debug -add sip msg
    debug -open

usr/config$
```

Figure 21-12 debug command list

Parameter Usages:

-status: Display the enabled debug flags.

-add: Add debug flag.

-- sip: sip related information

-- msg: voice related information

-delete: Remove specified debug flag.

-open: Start to show debug messages.

-close: Stop showing debug messages.

In this example, user open debug flags including sip, vp, msg.

```
usr/config$ debug -add sip msg
usr/config$ debug –open
```

For example:

```
usr/config$ debug -status
```

```
Current debug type enabled :
Debug Mode is open
DEBUG-> SIP    MSG
usr/config$
```

Figure 21-13 debug –status command

21.7.3 [reboot]

After [commit] command, type [reboot] to reload Gateway in new configuration. The procedure is as below:

```
usr/config$ reboot

 Start to Unregister ...
 Unregister complete...
. Rebooting...It will take 40 seconds....Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 21-14 reboot command

21.7.4 [flash]

Clean the configuration stored in flash.

```
usr/config$ flash

Flash memory information and configuration
Usage:
flash [-clean]
```

```
flash -clean    Clean the configuration stored.

Note:
        This command will clean the configuration stored in
        the flash and reboot it.

usr/config$
```

Figure 21-15 flash command list

Parameter Usages:

-clean: clean all the user defined value, and reboot Gateway in factory default mode.

Note:

It is recommanded that use [flash –clean] after application firmware id upgraded.

Warning:

User whose login name is root only executes it. All configurations in command [ifaddr] and [pppoe] will be kept.

For example:

```
usr/config$ flash -clean

Flash clean start
Flash clean success!!


!! rebooting ...
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
  WorkMode : PROXY_MODE
  Start registering to Proxy server

  AC4804[0] is ok
  AC4804[1] is ok
  successful 2 2
```

```
 Initialize OSS libraries...OK!
VP v1.42 stack open successfully.

login:
```

Figure 21-16 flash –clean command

21.7.5 [commit]

Save changes after configuring Gateway.

```
usr/config$ commit

This may take a few seconds, please wait..
Commit to flash memory ok!

usr/config$
```

Figure 21-17 commit command

Note:

Users shall use [commit] to save modified value, or they will not be activated after system reboot.

21.7.6 [ifaddr]

Configure and display Gateway network information.

```
usr/config$ ifaddr

LAN information and configuration
Usage:
ifaddr [-print]|[-dhcp used]|[-sntp mode [server]]
ifaddr [-ip ipaddress] [-mask subnetmask] [-gate defaultgateway]
ifaddr [-dns index [dns server address]] [-ipsharing used[ip address]]
ifaddr [-autodns used]

    -print      Display LAN information and configuration.
    -ip         Specify ip address.
    -mask       Set Internet subnet mask.
    -gate       Specify default gateway ip address
    -dhcp       Set DHCP client service flag (On/Off).
    -sntp       Set SNTP server mode and specify IP address.
    -autodns    Specify the way to obtain DNS Server (0:Manual/1:Auto).
```

```
    -dns          specify IP address of DNS Server.
    -timezone     Set local timezone.
    -ipsharing Specify usage of an IP sharing device and specify IP address.
    -httpdport WEB management HTTP port.
    -security     The encrypt switch (0:Off/1:MD5/2:RC4).

Note:
    Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
    DHCP client setting value (On=1, Off=0). If DHCP set to 'On',
    Obtain a set of Internet configuration from DHCP server assgined.
    SNTP mode (0=no update, 1=specify server IP, 2=broadcast mode).
Example:
    ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate 210.59.163.254
    ifaddr -dhcp 1
    ifaddr -sntp 1 210.59.163.254
    ifaddr -ipsharing 1 210.59.163.254
    ifaddr -autodns 1
    ifaddr -dns 1 168.95.1.1
    ifaddr -security 1

usr/config$
```

Figure 21-18 ifaddr command list

Parameter Usages:

-print: Print current IP setting and status

-ip: Assigned IP address for Gateway

-mask: Assigned internet subnet mask

-gate: Assigned IP default gateway

-dhcp: Dynamic Host Configuration (1 = ON; 0 = OFF)

-dns: Setup DNS Server IP Address.

-sntp: Simple Network Time Protocol (0=No update, 1=Specify server IP, 2=broadcast mode). When SNTP function is activated, users have to specify a SNTP server as network time source. An example is demonstrated below:

```
usr/config$ ifaddr -sntp 1 10.1.1.1
```

-autodns: Auto or manual configures the DNS IP address when gateway device is under DHCP and PPPoE mode.

-timezone: set local time zone according to GMT

-ipsharing: To specify a global fixed IP address, user can add this IP address in the

command.

-httpdport WEB management HTTP port.

-security The encrypt switch (0:off/1:MD5/2:RC4)

```
usr/config$ ifaddr -ipsharing 1 210.11.22.33
```

Note:

If the IP address is not a fixed one, the dedicated IP address is not necessary in the command. However, dynamic IP Address is not working in Peer-to-Peer mode.

For example:

```
usr/config$ ifaddr -print

Internet address information
    WAN IP address          : 192.168.13.4
    Subnet mask             : 255.255.248.0
    Default gateway         : 192.168.8.254
    DHCP startup            : OFF
    SNTP                    : mode=1
                              server 168.95.195.12
                              time zone : GMT+8
                              cycle=1024 mins

    IPSharing               : no IPSharing device.

    Primary DNS Server      : 168.95.192.1
    Secondary DNS Server : 168.95.1.1
    HTTP port               :80
    Security                :OFF
usr/config$
```

Figure 21-19 ifaddr –print command

21.7.7 [time]

When SNTP function of Gateway is enabled and SNTP server can be found as well, type [time] command to show current network time.

```
usr/config$ time
Current time is WED SEP 17 12:36:49 2003

usr/config$
```

Figure 21-20 time command list

21.7.8 [ping]

Use [ping] to test whether a specific IP is reachable or not.

For example: if 192.168.1.2 is not existing while 210.63.15.32 exists. Users will have the following results:

For example:

```
usr/config$ ping 192.168.1.2
no answer from 192.168.1.2
usr/config$ ping192.168.1.254
PING 192.168.1.254: 56 data bytes
64 bytes from 192.168.1.254: icmp_seq=0. time=5. ms
64 bytes from 192.168.1.254: icmp_seq=1. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=2. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=3. time=0. ms
----192.168.1.254 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trIP (ms)   min/avg/max = 0/1/5
210.63.15.32 is alive
usr/config$
```

Figure 21-21 ping command list

21.7.9 [pbook]

Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

```
usr/config$ pbook

Phonebook information and configuration
Usage:
pbook [-print [start_record] [end_record]]
pbook [-add [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-search [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-insert [index] [ip ipaddress] [name Alias] [e164 phonenumber] [port
numb
er]]
```

```
pbook [-delete index]
pbook [-modify [index] [ip ipaddress] [name Alias] [e164 phonenumber] [port
numb
er]]

      -print        Display phonebook data.
      -add           Add an record to phonebook.
      -search       Search an record in phonebook.
      -delete       Delete an record from phonebook.
      -insert       Insert an record to phonebook in specified position.
      -modify       Modify an exist record.
      -deleteall Delete all records from phonebook.
Note:
      If parameter 'end_record' is omited, only record 'start_record' will be disp
lay.
      If   both parameters 'end_record' and 'start_record' are omited, all records
will be display.
      Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
      Range of index setting value (1~100),
Example:
      pbook -print 1 10
      pbook -print 1
      pbook -print
      pbook -add name Test ip 210.59.163.202 e164 1001
      pbook -insert 3 name Test ip 210.59.163.202 e164 1001
      pbook -delete 3
      pbook -search ip 192.168.4.99
      pbook -modify 3 name Test ip 210.59.163.202 e164 1001
      pbook -deleteall

usr/config$
```

Figure 21-22 pbook command list

Parameter Usages:

-print: Print out current contents of Phone Book. Users can also add index number, from 1 to 100, to the parameter to show specific phone number.

Note:

Index number: means the sequence number in phone book. If users do

request a specific index number in phone book, Gateway will give each record a automatic sequence number as index.

-add: add a new record to phone book. When adding a record, users have to specify name, IP, and e164 number to complete the command.

--name: Name to represent caller.

--e164: e.164 number for mapping with IP address of caller

--ip: IP address of caller

--port: Call signal port number of caller

--drop : Drop e.164 number when dial out. 0 means to keep e.164 number, 1 means to drop e.164 number when dialing out.

--deleteall: delete all the pbook number.

--inert: Insert digits.(1~10 digits)

```
usr/config$ pbook –add name test e164 100 ip 192.168.13.78
```

-modify: modify an existing record. When using this command, users have to specify the record's index number, and then make the change.

```
usr/config$ pbook –modify 1 name test e164 5678 ip 192.168.1.10 port 1730
drop 0
```

-delete: delete a specific record. [pbook –delete 3] means delete index 3 record.

```
usr/config$ pbook –delete 3
```

PhoneBook Rules:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination's IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

For example:

```
usr/config$ pbook -print

index    Name            IP                    E164            Port
=========================================================
1        74              192.168.13.74         74
---------------------------------------------------------
usr/config$
```

Figure 21-23 pbook -print command

21.7.10 [pppoe]

Display PPPoE related information.

```
usr/config$ pppoe

PPPoE device information and configuration
Usage:
pppoe [-print]|[-open]|[-close]
pppoe [-dev on/off][-id username][-pwd password]

      -print        Display PPPoE device information.
      -dev          Enable(=1) or Disable(=0) device.
      -open         Open PPPoE connection.
      -close        Disconnect PPPoE connection.
      -id           Connection user name.
      -pwd          Connection password.
      -reboot       Reboot after remote host disconnection.
      -echo         PPPoE Echo Request (0=disable, 1=enable).
usr/config$
```

Figure 21-24 pppoe command list

Parameter Usages:

-print: print PPPoE status.

-dev: Enable PPPoE Dial-up function

-open: Open the connection

-close: Close the connection

-id: Input the User name ID provided by ISP

-pwd: Input the User name password provided by ISP

-reboot: Reboot the PPPoE connection.

-echo: Enable or Disable PPPoE echo request function.

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
      Device              : Enabled
      Status              : Not initialized
      User name           : pppoe
      Password            : *****
      Reboot              : No
      Echo                : Enable
```

```
usr/config$
```

Figure 21-25 pppoe –print command list

21.7.11 [sysconf]

This command displays system information and configurations.

```
usr/config$ sysconf

System information and configuration
Usage:
 sysconf [-print] [-idtime digit] [-bf digit] [-keypad dtmf]
            [-faxtype type][-2833type type][-lcdrop ON/OFF]
            [-droptime digit][-eod digit] [-callerid type]
            [-service used][-dtmfstart digits] [-dtmfend digits]
 sysconf -print

 -print          Display system overall information and configuration.
 -idtime         Inter-Digits time.(1~10 sec)
 -service        Specify gateway service type. (0: Dial in service,
                   1: HotLine service.)
 -bf             BusyForward.(ON:1 / OFF:0)
 -keypad         Select DTMF type: 0=In-band,
                                   1=RFC2833.
                                   2=INFO.
 -faxtype        FAX Payload Type       (range:96~128
inter-used:100,102~105)
 -2833type       RFC2833 Payload Type (range:96~128
inter-used:100,102~105)
 -lcdrop         Disconnect Supervision(Loop Current Drop) (ON:1 / OFF:0)
 -droptime       Period of Loop Current Drop (ms)
 -duration       The duration in INFO message
 -eod            End of Dial Digit setting(0: none, 1: *, 2: #)
 -callerid       Caller ID Type setting, 0: Disable,
                                         1: FSK(BELLCORE),
                                         2: DTMF,
                                         3: FSK(ETSI).
 -dtmfstart      DTMF CallerID Start Symbol.
 -dtmfend        DTMF CallerID End Symbol.
 -ivr            IVR Auto Hang up (0:Disable /1:Tone /2:reverse )
```

```
 -userphone      Add user=phone parameter in the SIP message (ON:1/OFF:0)
 -billing        Billing Mode(0:None/1:Reverse/2:Tone/3:F12K/4:F16K)
 -bmod           Billing Method Mode(0:Only Once/1:Repeat)
 -transfer       Transfer Mode(0:Disable/1:Enable)
 -mwi            Enable the MWI subscription function
                 (0: OFF, 1: Client(Subscribe),2: Proxy(NOTIFY))
 -mwiexpires     MWI Subscription Keep Alive for Client(default:1800 sec)
 -mwinumber      Voice MailBox Number
 -autosiport     SIP port assigning manner(0:Disable/1:Enable)
 -snumber        When dial this number it will use G.711A codec only.
 -waiting        Enable the Call Waiting function(0: OFF, 1: ON)
 -ptime          Include the ptime parame(0: OFF, 1: ON)
Example:
  sysconf -keypad 0 -eod 2 -callerid 1
  sysconf –duration 160
usr/config$
```

Figure 21-26 sysconf command list

Parameter Usages:

-print: Print current sysconf settings.

-idtime: Set the duration (in second) of two pressed digits in dial mode as timed out. If after the duration user hasn't pressed next number, it will dial out all number pressed (1-10 seconds).

-service: set SIP Phone to be normal mode or under hotline mode. (sysconf –service 0/1, 0 for normal service, 1 for hotline service.)

-bf: Only working in Proxy mode and Peer-to-Peer mode (some previous version does not support in Peer-to-Peer mode). If the line1 is engaged as well as this function is enabled, the line2 will be ringing.

-keypad: DTMF replay type. When value is "1", FXS Gateway will transfer DTMF signal via RTP payload as defined in RFC2833. When the value is set to "0", the DTMF type is set as In-band, and set 2 for SIP info method.

-faxtype: FAX Payload Type. Rrange:96~128 inter-used:100,102~105.

-2833type: RFC2833 Payload Type. Range: 96~128 inter-used: 100, 102~105.

-lcdrop: Disconnect Supervision (Loop Current Drop) (ON:1 / OFF:0).

-droptime: Period of Loop Current Drop (ms).

-duration : setup flash send SIP info value, default 160.

-eod: It will transfer the DTMF in [#] if users disable the end of dial function. Users have to press the keypad in [#] if the end of dial function is enabled.

-callerid: Support Bell Core and DTMF callerID function. After the first ring at destination site, device will send line number as callerID to called site.
-dtmfstart: DTMF CallerID Start Symbol.
-dtmfstart: DTMF CallerID End Symbol.
-userphone: The user=phone is a SIP parameter; it indicates that this is phone call. Some endpoint does not recognize this parameter, so 350x provide this command to disable this parameter.
-billing: The billing methods are actually based on the ISP's billing server. Now our FXS gateway can support four methods for billing. The "Reverse" means that the "circuit" and "voltage" will change when the call is setup, and your billing server will start to bill according to the "voltage". The "Tone" means that the FXS will send a special tone to your server, named C tone and D tone, your server will recognize these tones, start or stop billing. For the F12K and F16k billing methods, they are customized billing methods, they only for a special customer's billing system.
-bmod: This is a special billing function; it only for a special customer's billing system.
-transfer: User can enable or disable transfer function by this command, 0 for disable and 1 for enable. Default is disabled. If this function is close press flash key should be send a SIP info message.
-autosiport: The default SIP listen port is 5060. Enable this function can assign a dynamic SIP listen port based on the MAC address.
-mwi:support phone to show miss call light.
-waiting: Enable this function can receive second incoming call
-ptime: support packet include voice codec ptime information or not include ptime.

For example:

```
usr/config$ sysconf -print

System information
        Gateway Service              : 0
        Inter-Digits time            : 3
        BusyForward                  : OFF
        Keypad DTMF type             : RFC2833
        End of Dial Digit            : #
        Caller ID Type               : x
        DTMF Caller ID Start Symbol : D
        DTMF Caller ID End Symbol    : C
        RFC2833 Payload Type         : 101
```

```
        FAX Payload Type                : 96
        Disconnect Supervision          : OFF
        Loop Current Drop Time(ms)      : 500
        Duration Value in INFO          : 160
        user=phone parameter            : ON
        IVR Auto Hang up                : Disable
        Billing Sig Mode                : None
        Transfer Mode                   : Disable
        MWI subscription                : OFF
        Special number                  : x
        SIP port assigning manner       : Disable
        Billing Method Mode             : Only Once
        Call Waiting                    : OFF
        Include Ptime                   : ON
usr/config$
```

Figure 21-27 sysconf -print command

21.7.12 [sip]

This command is to configure SIP related parameters.

```
usr/config$ sip

SIP stack information and configuration
Usage:
sip [-print] [-mode    pxmode] [-outpx IPaddmress][-transport type]
sip [-px address] [-px2 address] [-pxport number] [-outpxport number]
      [-line1 number] [-line2 number] [-line3 number] [-line4 number]
      [-prefix prefixstring] [-expire t1] [-port udpPort] [-rtp rtpPort]
sip -print

      -print        Display SIP stack information and configuration.
      -mode         Configure as Peer-to-Peer mode:0/Proxy mode:1/Gateway
mode:2.
      -px           Primary Proxy server address. (IPv4 address or dns name)
      -px2          Secondary Proxy server address. (IPv4 address or dns name)
      -pxport       Primary Proxy server port.       (the port of Primary proxy)
      -px2port      Secondary Proxy server port.       (the port of Secondary proxy)
      -outpx        OutBound Proxy server address. (IPv4 address or dns name)
      -outpxport OutBound Proxy server port. (the port of OutBound proxy)
```

```
      -prefix       Specify prefix string, use it when UserID contains alphabets
                      (if UserID uses numerals, specify as null)
      -line1        TEL1 Phone number.
      -line2        TEL2 Phone number.
      -line3        TEL3 Phone number.
      -line4        TEL4 Phone number.
      -line1s       TEL1 Stauts     0:close/1:open.
      -line2s       TEL2 Stauts     0:close/1:open.
      -line3s       TEL3 Stauts     0:close/1:open.
      -line4s       TEL4 Stauts     0:close/1:open.
      -pbsearch    Search phone book       0:off/1:on.
      -ringback    Play Local Ringback Tone       0:off/1:on.
      -lmedia       Late Media       0:off/1:on.
      -prack        PRovisional ACKnowledgment    0:off/1:on.
      -expire       The relative time after which the message expires(0 ~ (2^31-1))
      -sexpire      The session timer(Session-Expires) are used to keep the
session
                      active(Default: x don't support timer,range:0 ~ (2^31-1))
      -minse        The minimum session timer(Session-Expires).
                      (Default: x don't support minimum timer,range:0 ~ (2^31-1))
      -port         SIP local UDP port number (2326~65534), Default: 5060
      -rtp          RTP port number (2326~65534), Default: 16384
      -useragent User agent set    (set x to use the default)
      -t1           Retransmission T1 set    (default:500)
      -t2           Retransmission T2 set    (default:4000)
      -t4           Retransmission T4 set    (default:5000)
      -linger       General Linger Timer     (default:32000)
Example:
       sip -mode 1
       sip -px 210.59.163.171 -line1 70 -line2 71 -line3 72 -line4 73


usr/config$
```

Figure 21-28 sip command list

Parameter Usages:

-mode: Configure as Proxy mode or Peer-to-Peer mode (0: Peer-to-Peer mode, 1: Proxy mode, Gateway Mode).

-px: to specify Proxy address when FXS Gateway is in proxy mode. Proxy address can

be IPv4 address or DNS name.

-px2: to setting Secondary Proxy server address. Proxy address can be IPv4 address or DNS name.

-pxport: Set Proxy port for SIP-Phone to send message, default value is 5060, if there is no special request of Proxy server, please don't change this value.

-px2port: Set 2nd Proxy port for SIP-Phone to send message, default value is 5060, if there is no special request of Proxy server, please don't change this value.

-outpx: Set IP Address or URL address (Domain Name Server must be configured. Please refer to Network Configure) of outbound Proxy server.

-outpxport: Set outbound Proxy port for SIP-Phone to send message, default value is 5060, if there is no special request of Proxy server, please don't change this value.

-prefix: when your username contains alphabets, for example sip1123, then specify the prefix string as "sip".

-line1: assign line 1 number.

-line2: assign line 2 number.

-line1s:display line status, the user can use this option to force close the line status.

–pbsearch: enable/disable phone book search function under Proxy Mode. If user enabled this function, SIP-Phone will search dialed number in phone book to see if there is any matched table before send to Proxy server, and if there is a matched data in phone book, SIP-Phone will make call to related IP address.

-expire: this parameter is used to inform proxy server the valid duration of the registration information.

-port: SIP local UDP port which uses to listen incoming SIP Messages.

-useragent:setting packet see the useragnet name.(default x is show device model name)

-rtp: Specify the RTP received port number.

-t1 :set retransmissions request time intervals(etc.500ms 1s,2s, 4s,4s,)

-t2 :set retransmissions stop request time

-t4 :T4 represents the amount of time the network will take to clear messages between client and server transitions.

-linger: When the client receives a Request: Option message from the server, the client will take some to process the request. If another option is sent again from the server while the client has not finished processing the option message sent in the first place, the client will crash. Therefore, this option will allows you to adjust the processing time for the Request: Option. Where you can speed up the process by adjusting a lower linger time value. As a result, collision of the next option message can be avoided.

Note: *One will need to configure port and rtp parameters only when you deploy two or more sets behind the IP sharing device (Router).*

For example:

```
usr/config$ sip –print

    Run Mode                    : PEER-2-PEER MODE
    Prefix string               : null
    Line1                       : 1001
    Line2                       : 1002
    Line3                       : 1003
    Line4                       : 1004
    pbook search                : OFF
    SIP listen port             : 5060
    RTP receive port            : 16384
usr/config$
```

Figure 21-29 sip –print command list

```
usr/config$ sip –print

    Run Mode                    : PROXY MODE
    Primary Proxy address       : 10.1.1.2
    Secondary Proxy address     : null
    Proxy port                  : 5060
    OutBound Proxy address      : null
    Transport Type (TCP/UDP) : UDP
    Prefix string               : null
    Line1                       : 1001
    Line2                       : 1002
    Line3                       : 1003
    Line4                       : 1004
    Line1 Status                : Open
    Line2 Status                : Open
    Line3 Status                : Open
    Line4 Status                : Open
    pbook search                : OFF
    SIP listen port             : 5060
```

```
      RTP receive port          : 16384
      Expire                    : 3600
      Session Expire            :x
      Minimum Session Expire    :x
      User agent                :x
      Retransmission T1         :500
      Retransmission T2         :4000
      Retransmission T4         :5000
      General Linger Timer      : 32000
usr/config$
```

Figure 21-30 sip –print command list

```
usr/config$ sip -print

      Run Mode                  : Gateway MODE
      Primary Proxy address     : 10.1.1.2
      Secondary Proxy address   : null
      Proxy port                : 5060
      OutBound Proxy address    : null
      Transport Type(TCP/UDP)   : UDP
      Prefix string             : null
      Line1                     : 1001
      pbook search              : OFF
      SIP listen port           : 5060
      RTP receive port          : 16384
      Expire                    : 60
      Session Expire            :x
      Minimum Session Expire    :x
      User agent                :x
      Retransmission T1         :500
      Retransmission T2         :4000
      Retransmission T4         :5000
      General Linger Timer      : 32000
usr/config$
```

Figure 21-31 sip –print command list

21.7.13 [security]

This command is used to configure the account information included username

and password obtained from the service provider

```
usr/config$ security

Secuirty information and configuration
Usage:
 security [-line number][-name username] [-pwd password]
 security [-print]

 -print          Display system account information and configuration.
 -line           Specify which line number you want to set the account.
 -name             Specify user name.
 -pwd            Specify password.
Example:
   security -line 1 -name 1001 -pwd 1001
   security -line 2 -name 1002 -pwd 1002
   security -line 3 -name 1003 -pwd 1003
   security -line 4 -name 1004 -pwd 1004

usr/config$
```

Figure 21-32 security Command List

Parameter Usages:

-print: print current setting in security command.

-line: Specify which line number you want to set into the account

Note: *If you have only one account, you can set into line1 or line2 using this parameter. For example, if you set the account into line1, line1 can accept incoming calls.*

-name: Specify the username of your account information.

-pwd: Specify the password of your account information.

For example:

```
usr/config$ security -print

 Line1 account information
     Username       : 1001
     Password       : ***
 Line2 account information
     Username       : 1002
```

```
    Password      : ***
 Line3 account information
    Username      : 1003
    Password      : ***
 Line4 account information
    Username      : 1004
    Password      : ***
usr/config$
```

Figure 21-33 security –print command list

21.7.14 [voice]

The voice command is associated with the audio setting information. There are four voice codecs supported by Gateway.

```
usr/config$ voice

Voice codec setting information and configuration
Usage:
voice [-send [G723 ms] [G711U ms] [G711A ms] [G729 ms] ]
        [-volume [voice level] [input level] [dtmf   level]]
        [-nscng [G711U used1] [G711A used2] [G723 used3]]
        [-echo used] [-mindelay t1] [-maxdelay t2]
voice -print
voice -priority [G723] [G711U] [G711A] [G729]

    -print       Display voice codec information and configuration.
    -send        Specify sending packet size.
                 G.723   (30/60 ms)
                 G.711U (20/40/60 ms)
                 G.711A (20/40/60 ms)
                 G.729   (20/40/60/80 ms)
    -priority   Priority preference of installed codecs.
                 G.723
                 G.711U
                 G.711A
                 G.729
    -volume      Specify the following levels:
                 voice volume (0~63, default: 25),
                 input gain (0~38, default: 25),
```

```
                dtmf    volume (0~31, default: 23),
    -nscng      No sound compression and CNG. (G.723.1 only, On=1, Off=0).
    -echo       Setting of echo canceller. (On=1, Off=0, per port basis).
    -mindelay   Setting of jitter buffer min delay. (0~150, default: 90).
    -maxdelay   Setting of jitter buffer max delay. (0~150, default: 150).
Example:
    voice -send g723 60 g711u 60 g711a 60 g729 60
    voice -volume voice 20 input 32 dtmf 27
    voice -echo 1 1 1 1
usr/config$
```

Figure 21-34 voice command list

Parameter Usages:

-print: Print current voice information and configurations.

-send: To define packet size for each codec. 20/40/60/80 ms means to send a voice packet per 20/40/60/80 milliseconds. The smaller packet size, the shorter delay time. If network is in good condition, smaller sending packet size is recommanded. In this parameter, 20/40/60ms is applicable to G.711u/a law, 20/40/60/80ms is applicable to G.729 codec, while 30/60ms is applicable to G.723.1 codec.

-priority: Codec priority while negotiating with other SIP device. The codec listed in left side has the highest priority when both parties determining final codec.

```
usr/config$ voice –priority g723    (only select this codec)
usr/config$ voice –priority g723 g729 g711u g711a (select four codecs, and
g723 is the first choice)
```

-volume: There are three adjustable value.

--voice volume stands for volume, which can be heard from Gateway side(range 0~63, default: 28).

--input gain stands for volume, which the opposite party hears (range 0~38, default: 28).

--dtmf volume stands for DTMF volume/level, which sends to its own Line (range 0~31, default: 23).

-nscng: Silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only.

```
usr/config$ voice -nscng g723 1
```

-echo: On or Off the activate each canceler.

-mindelay: The minimum jitter buffer size (Default value= 90 ms).

-maxdelay: The minimum jitter buffer size (Default value= 150 ms).

```
usr/config$ voice –mindelay 90 –maxdelay 150
```

Note:

Be sure to know well the application before you change voice parameters because this might cause incompatibility.

For example:

```
usr/config$ voice -print

Voice codec setting relate information
    Sending packet size    :
            G.729A          : 40 ms
            G.723.1         : 60 ms
            G.711U          : 40 ms
            G.711A          : 40 ms
    Priority order codec :
            g729a g7231 g711u g711a
    Volume levels           :
            voice volume : 25
            input gain     : 25
            dtmf volume    : 23
 No sound compress & CNG :
            G.729A          : There is no setting
            G.723.1         : Off
            G.711(U-Law) : Off
            G.711(A-Law) : Off
    Echo canceller          : On On On On
    Jitter buffer           :
            Min Delay       : 90
            Max Delay       : 150
usr/config$
```

Figure 21-35 voice –print command

21.7.15 [support]

This command provides some extra functions that might be needed by users.

```
usr/config$ support
```

```
Special Voice function support manipulation
Usage:
support [-t38 enable]
            [-busy number] [-noanswer number] [-uncon number]
support -print
      -t38          T.38(FAX) enabled/disabled.
      -modem        Modem relay enabled/disabled.
      -busy         Busy Forward number.(if empty, please fill "null")
      -noanswer No Anser Forward number.(if empty, please fill "null")
      -uncon        Unconditional Forward number.(if empty, please fill "null")
      -faxecm      Faxecm (0:T38fax ECM Disable    1:T38fax ECM Enable).
      -faxrd       Fax redundancy depth (0 ~ 2).
      -faxmd       Fax modem volume.
Example:
      support    -t38 1
      support    -modem 1
      support    -busy 1 1001
      support    -uncon 2 null
      support    -faxecm 1
      support    -faxrd    2
      support    -faxmd    6
usr/config$
```

Figure 21-36 support command list

Parameter Usages:

-print: print current settings in support command.

-t38: Enable or disable T.38 fax ability. The function is will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.

-busy: Provide setting busy forwrd to other number, when you setting this function. Then this channel busy, auto forward to setting phone number.

-noanswer: Provide setting noanser forwrd to other number, when you setting this function. Then this channel not answer, auto forward to setting phone number.

-uncon: Provide setting noanser forwrd to other number, when you setting this function. Then all call this channel number, will all auto forward to setting phone number.

Note:

It is not recommanded to change the value in this command, only if users do know well the application. This might cause incompatibility with other devices.

For example:

```
usr/config$ support -print

Special Voice function support manipulation
      T.38(FAX) support : Disabled
      Modem relay          : Disabled
      Faxecm               : Enabled
      Redundancy depth   : 2
      Modem volume        : 6
      Fax max rate        : 14400
Forward Numbers
      Busy Forward number: 0123456789
      NoAnswer Forward number: 0212345678
      Uncondition Forward number:
usr/config$
```

Figure 21-37 support –print command list

21.7.16 [tos]

IP Packet ToS (Type of Service)/ Differentiated Service configuration.

```
usr/config$ tos

IP Packet ToS(type of Service)/Differentiated Service configuration
Usage:
tos [-rtptype dscp]
tos [-sigtype dscp]
tos -print
       [-rtpreliab mode]
tos -print

Example:
      tos -rtptype 7 -sigtype 0
usr/config$
```

Figure 21-38 tos command list

Parameter Usages:

-rtptype: the packages of voice (0~63).
-sigtype: the package of call signal (0~63).

Note:

The value of rtptype and sigtype is from 0 to 63. Its working if it supported by your network.

For example:

```
usr/config$ tos –print

IP Packet ToS information:
      Signalling Packet:
            DSCP Code : 0
      Media Packet        :
            DSCP Code : 0

usr/config$
```

Figure 21-39 tos -print command

21.7.17 [phone]

Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

```
usr/config$ phone

Phone ringing , ringback tone , busy tone , dial tone setting and notes
Usage:

phone [-ring [freq     ] [ringON    ] [ringOFF ] [ringLevel]]
        [-rbt    [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-bt     [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-dt     [freqHi ] [freqLo    ] [freqHiLev] [freqLoLev]
                  [Tone1ON] [Tone1OFF] [Tone2ON    ] [Tone2OFF ]]
        [-flash [freqLo ] [freqHi ]]
        [-level [loopCurrentLevel] [onhookLineVoltageLevel ]]
phone [-print [ring]|[rbt]|[bt]|[dt]|[flash]]
```

```
        -print   Display phone ringing/tone configuration.
                   ring :     ringing
                   rbt   :    ring back tone
                   bt    :    busy tone
                   dt    :    dial tone
                   flash:     flash tone
        -ring    ringing configuration set .
        -rbt     ringback tone configuration set .
        -bt      busy tone configuration set .
        -dt      dial tone configuration set .
        -flash   flash configuration set .
        -level   Loop Current and On-Hook Line Voltage level set .
Note:
        ringing frequency     : 15 ~ 100     (Unit : Hz)
        ringing ring ON/OFF : 0   ~ 8000   (Unit : ms)
        ringing level          : 0   ~ 94      (Unit : V)
        tone      frequency     : 0   ~ 65535 (Unit : Hz)
        tone      freqLevel     : 0   ~ 65535 (Unit : mVrms)
        tone      Tone ON/OFF : 0   ~ 8000   (Unit : ms)
        level     loopCurrent : 0   ~ 7       (20mA ~   41mA, Step :   3mA)
        level     OnHookVol     : 0   ~ 63      (   0V ~ 94.5V, Step : 1.5V)
Example:
        phone -print rbt
        phone -ring 20 2000 4000 94
        phone -rbt 480 440 125 105 2000 4000 2000 4000
        phone -bt 620 480 125 105 500 500 500 500
        phone -dt 440 350 96 96 8000 0 8000 0
        phone -flash 400 800
        phone -level 1 32

usr/config$
```

Figure 21-40 phone command list

Parameter Usages:

-print: Print current call progress tone configurations (ring: ring tone, rbt: ring back tone, bt: busy tone, dt: dial tone). This parameter should be accompanied with tone type.

-ring: To set RING tone value. The played tone type, when Gateway is receiving a call.
-rbt: To set RingBackTone value. The played tone type, when Gateway receives a Q.931 Alerting message. In condition that Gateway is the originate side.
-bt: To set BusyTone value. The played tone type, when destination is busy.
-dt: To set DialTone value. The played tone type, when hook off a phone set of workable Gateway.
-flash: Set the detective flash range in ms, for example, 300-500 ms.

Note:

For tone simulation, Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

For example:

```
usr/config$ phone -print rbt
Phone ringback tone paramter
      Ringback Tone frequency high          : 480
      Ringback Tone frequency low           : 440
      Ringback Tone frequency high level    : 155
      Ringback Tone frequency low level     : 155
      Ringback Tone tone1 on                : 2000
      Ringback Tone tone1 off               : 4000
      Ringback Tone tone2 on                : 2000
      Ringback Tone tone2 off               : 4000

usr/config$
```

Figure 21-41 phone –print rbt command

```
usr/config$ phone -print rbt

Phone ring back tone paramter
      Ringback Tone frequency high          : 440
      Ringback Tone frequency low           : 480
      Ringback Tone frequency high level    : 13
      Ringback Tone frequency low level     : 13
      Ringback Tone tone1 on                : 100
      Ringback Tone tone1 off               : 200
      Ringback Tone tone2 on                : 100
```

```
    Ringback Tone tone2 off                 : 200

usr/config$
```

Figure 21-42 phone –print rbt command

```
usr/config$ phone -print bt

Phone busy tone paramter
    Busy Tone frequency high            : 620
    Busy Tone frequency low             : 480
    Busy Tone frequency high level    : 155
    Busy Tone frequency low level     : 155
    Busy Tone tone1 on                  : 500
    Busy Tone tone1 off                 : 500
    Busy Tone tone2 on                  : 500
    Busy Tone tone2 off                 : 500

usr/config$
```

Figure 21-43 phone –print bt command

```
usr/config$ phone -print dt

Phone dial tone paramter
    Dial Tone frequency high            : 440
    Dial Tone frequency low             : 350
    Dial Tone frequency high level    : 155
    Dial Tone frequency low level     : 155
    Dial Tone tone1 on                  : 8000
    Dial Tone tone1 off                 : 0
    Dial Tone tone2 on                  : 8000
    Dial Tone tone2 off                 : 0
usr/config$
usr/config$
```

Figure 21-44 phone –print dt command

```
usr/config$ phone -print flash

Phone flash paramter
```

```
    Flash frequency high : 800
    Flash frequency low   : 400

usr/config$
```

Figure 21-45 phone –print flash command

21.7.18 [bureau]

To set Hotline function.

```
usr/config$ bureau

Bureau line setting information and configuration
Usage:
bureau   [-hotline [Port DestIP TELnum]]
bureau -print

    -print      Display Bureau line information and configuration.
    -hotline    Set Hot line information. (Port range: 1~6)
Note:
    Hotline feature should be used together with:
        $sysconf -service 1 (HotLine service)
Example:
    bureau -hotline 1 192.168.4.69 628 2 192.168.4.200 999

usr/config$
```

Figure 21-46 bureau command list

Parameter Usages:

-print: Display current Hotline table.

-hotline: Define Line1 and Line2's Hotline table respectively. The table is included [Line number], [destination IP Address] and [destination Port or Number].

For example

1. Destination is a FXS device, 628 is its Line number

   usr/config$ bureau -hotline 1 200.168.4.69 628

   User picks up the Line1, and then hears the ring back tone generated from destination. Of course, 628 are ringing simultaneously.

2. Destination is a FXO device, Port 3 is the one connected to PSTN Line.

   usr/config$ bureau -hotline 1 200.168.4.69 82265699

User picks up the Line1, and then hears the ring back tone generated from destination. Simultaneously, 82265699 numbers is the destination, which is dialed from Port 3.

(Above FXO example is subject to the FXO configurations, such as 2nd dial ON or OFF.)

For example:

```
usr/config$ bureau -print

Bureau line setting relate information
      Hot line table
      ============================================
      Port        Destination Address          Remote TEL
      --------------------------------------------
       1               192.168.13.78               629
      ============================================

usr/config$
```

Figure 21-47 bureau –print command list

21.7.19 [rom]

ROM file information and firmware upgrade function.

```
usr/config$ rom

ROM files updating commands
Usage:
rom [-print] [-app] [-boot] [-dsptest] [-dspcore] [-dspapp]
      [-ht] [-method used] [-boot2m]
      -s TFTP/FTP server ip -f filename
rom -print
      -print        show versions of rom files. (optional)
      -app           update main application code(optional)
      -boot          update main boot code(optional)
      -boot2m       update 2M code(optional)
      -ht             updata Hold Tone PCM file(optional)
      -dsptest     update DSP testing code(optional)
      -dspcore     update DSP kernel code(optional)
      -dspapp       update DSP application code(optional)
```

```
      -s              IP address of TFTP/FTP server (mandatory)
      -f              file name(mandatory)
      -method         download via TFTP/FTP (TFTP: mode=0, FTP: mode=1)
      -ftp            specify username and password for FTP
Note:
      This command can run select one option in 'app', 'boot',
      , 'dsptest', 'dspcore', and 'dspapp'.
Example:
      rom -method 1
      rom -ftp vwusr vwusr
      rom -app -s 192.168.4.101 -f app.bin

usr/config$
```

Figure 21-48 rom command list

Parameter Usages:

-print: show versions of all rom files.

-app, boot, boot2m, dsptest, dspcore, dspapp, ht: To update main Application program code, Boot code, DSP testing code, DSP kernel code, or DSP application code, and Hold Tone file.

Note:

Most of all, the Rom file needed to get upgrade is App or Boot2m. Please check the exactly Rom file before doing download procedure.

-s: To specify TFTP server's IP address when upgrading ROM files.

-f: To specify the target file name, which will replace the old one.

-method: To decide using TFTP or FTP as file transfer server. [0] stands for TFTP, while [1] stands for FTP.

-ftp: If users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.

For example:

```
usr/config$ rom –print

Download Method    :    TFTP
          Boot Rom    :    sdboot.200
Application Rom    :    4asip0519.BIN
            DSP App    :    48302ce3.140
       DSP Kernel    :    48302ck.140
```

```
  DSP Test Code   :   483cbit.bin
       Hold Tone   :   holdtone.101


usr/config$
```

Figure 21-49 rom –print command list

21.7.20 [auth]

For security concern, the “root” user can customize some configurable items for “administrator” user.

```
usr/config$ auth

Root control what command administrator can use.
Usage:
auth -print Display auth switch configuration.
                Use item name to do config name (0=Disable, 1=Enabled).
Example: auth -ifaddr 1

usr/config$
```

Figure 21-50 auth command list

Parameter Usages:

-“item name”: Assign the configurable item for “administrator” user.

```
usr/config$ auth -ifaddr 1
usr/config$ auth -sip 1
usr/config$ auth -voice 1
```

Now the Administrator can use these command which Root user assign to them.

-print: Display the configurable items for “administrator” user.

For example:

```
usr/config$ auth -print

Root can control what command administrator can use.
     ifaddr     : Enable
     sip        : Disable
     line       : Disable
     pbook      : Enable
     support    : Disable
     sysconf    : Disable
```

```
      voice       : Disable
      phone       : Disable
      rtp         : Disable
      tos         : Disable
      prefix      : Disable
      passwd      : Enable
      rom         : Disable
      flash       : Disable
      bureau      : Enable
      pppoe       : Enable

usr/config$
```

Figure 21-51 auth –print command list

21.7.21 [passwd]

For security concern, users have to input the password before entering configuration mode. [passwd] command is for password setting purpose.

```
usr/config$ passwd

Password setting information and configuration
Usage:
passwd [-set [Login name] [Password]][-clean]

passwd -set       Loginname Password.
          -clean    Clear all password stored in flash.
Note:
    1. Loginname can be only 'root' or 'administrator'
    2. passwd -clean will clear all passwd stored in flash,
        please use it with care.
Example:
    passwd -set root Your_Passwd_Setting
    passwd -clean

usr/config$
```

Figure 21-52 passwd command List

Parameter Usages:

–set: Set login name and password, input login name then input new password.

-clean: Will clear all password setup, and change null.

Note:

Gateway Login name only use [root] or [administrator]. [root] and [administrator] have the same authorization, except commands that can be excuted by [Login name: root] only [passwd –set root], [rom –boot], [room-boot2m] and [flash –clean].

For example:

```
usr/config$ passwd -set root root1234

Setting
login: root
Password: root1234
OK
usr/config$
```

Figure 21-53 passwd –set command

```
sr/config$ passwd -clean

Please wait a moment!!

Clean password OK.
usr/config$
```

Figure 21-54 passwd –clean command

21.7.22 [line]

User can use [line] command to check the registered status, it only useful for proxy mode.

```
usr/config$ line

Gateway line information and configuration
Usage:
line -print          Gateway line information.
Example:
       line -print
```

Figure 21- 55 line command List

Parameter Usages:

–print: Check the line status

For example:

```
usr/config$ line -print

Line information and configuration
Line    Reg. Status
================
1       No     Ready
2       No     Ready
3       No     Ready
4       No     Ready
```

Figure 21-56 line -print command

21.7.23 [prefix]

This command is for make rules for drop or insert prefix digits.

```
usr/config$ prefix

Prefix drop/insert information and configuration
Usage:
prefix -add [prefix number][drop number][insert digits]
prefix -delete index
prefix -modify index [prefix number][drop number][insert number]
prefix -print      Prefix drop/insert information.
        prefix      The prefix of dialed number.
        drop         Drop prefix(Enable:1/Disable:0).
        insert      Insert digits..
prefix -bylength Insert prefix by number's length Enable:1/Disable:0).
prefix -length The length of the number which we hope to add prefix.
prefix -insert      The prefix(by number's length mode)
Example:
      prefix -add prefix 100 drop 1 insert 2000
      prefix -add prefix 100 drop 1
      prefix -add prefix 100 drop 0 insert 200
      prefix -delete 1
      prefix -modify 1 prefix 100 drop 0 insert 300
```

```
     prefix -bylength 1
     prefix -length   4
     prefix -insert 070

usr/config$
```

Figure 21-57 prefix command List

Parameter Usages:

-add: Add a rule to drop or insert prefix digits of incoming call.

--prefix: Set which prefix number to implement prefix rule.

--drop: Enable or disable drop function. If this function is enabled, Gateway will drop prefix number on incoming call.

--insert: Set which digit to insert on incoming call.

```
usr/config$ prefix -add prefix 100 drop 1 insert 2000
```

-modify: Modify a rule to drop or insert prefix digits of incoming call.

```
usr/config$ prefix –modify 100 drop 0 insert 200
```

-delete: Delete a rule to drop or insert prefix digits of incoming call.

```
usr/config$ prefix –delte modify 100 drop 0 insert 200
```

-bylength: This function can follow your phone number length to increase prefix number.

For example:

```
usr/config$ prefix -print

Prefix drop/insert information and configuration
    Add Prefix By Number'Length     : ON
    The Number's Length             : 3
    The Prefix                    : 02
Index   Prefix              Drop      Insert
=============================================
=============
1       100                 Enable    2000

usr/config$
```

Figure 21-58 prefix –print command

21.7.24 [pro]

This command is for provisional server settings.

```
usr/config$ pro

Pro information and configuration
Usage:
pro [-print] [-proip[ip]] [-proid[id]] [-propwd[pwd]]
[-protimer[minutes]]
pro -print

-print       Display system overall information and configuration.
-proip       Provision Server IP address
(000.000.000.000~255.255.255.255)
-proid       Provision Server login ID  (1~16 character )
-propwd      Provision Server login password  (1~16 character )
-protimer    Provision Server update cycle time (0~65535 minutes )
Example:
pro -proip 192.168.1.1 -proid hunter -propwd hunter -protimer 1440(1
days)

usr/config$
```

Figure 21-59 prefix command List

Parameter Usages:

-print: Display the provision server related settings.

-proip: Set provisional server IP. Provisional Server is software to help user can easily configure products. Please contact with your reseller for more information. Default value is “x”.

-proid: Specify Provisional Server authenticated ID to login provisional Server.

-propwd: Specify Provisional Server password to login Provisional Server.

-protimer: specify Provision Server discover cycle time.

For example:

```
usr/config$ pro -print

Pro information
        Provision Server IP address              : x
```

```
        Provision Server login ID                  : voip
        Provision Server login password             : voip
        Provision Server update cycle time          : 60 minutes
usr/config$
```

Figure 21-60 pro –print command